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NATAL PLANTS.

VOLUME 6.

—BY—

J. MEDLEY WOOD, A.L.S.,
DIRECTOR OF NATAL BOTANIC GARDENS, DURBAN,

—AND OF—

NATAL GOVERNMENT HERBARIUM.

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PREFACE.

In the preface to the last volume of this work it was stated that in consequence of the inability of the Government to continue the Grant in aid, the work must perforce come to a conclusion with that volume, representations were, however, made to the late Government, and members of the late Ministry were interviewed, with the result that the Grant was continued, and the 1st part of the present volume was published in May 1909, the 4th and final Part was completed in February 1912; whether another volume will be commenced or not is at present uncertain.

The whole of the drawings in this Volume have been made by Miss Franks who also dissected the flowers and selected the portions for representation.

A list of corrections and alterations in the nomenclature of the plants described in the previous volumes so far as known to us has been added, and will be found useful, especially to those who have the whole of the volumes.

As this may be the last opportunity I shall have in connection with this work I wish very heartily to thank all those who have in any way aided me in its preparation, especially to the Director and staff of the Herbarium at Kew, to whom I am greatly indebted, to the President and members of the Committee of the Durban Botanic Society, under whose auspices it was commenced and has always been carried on, to all those who have assisted by providing specimens or information at various times, and last though not least to my Assistant in the Herbarium, Miss Franks, for the many admirable drawings she has made, and also for much help in writing the descriptions.

J. MEDLEY WOOD.



M.F.

Bulbine asphodeloides, R.&S.

PLATE 501.

BULBINE ASPHODELOIDES, R. & S. (Fl. Cap. Vol. VI, p. 362).
Natural Order, LILIACEÆ.

A stemless perennial with a short thick tuberous rootstock. Leaves many, 10 to 25, linear, broadly channelled from base almost to apex, clasping at base and gradually tapering from 2 to 3 lines at base to a fine point at apex, 6 to 12 inches long, dark green, smooth, glabrous and shining. Peduncle 6 inches to 2½ feet long, terete or nearly so, raceme occupying 6 to 14 inches of the peduncle many flowered; bracts lanceolate from a broad base, curved, acuminate, up to ½ inch long; lower pedicels spreading, 1¼ to 1½ inch long, the upper ones gradually shorter. Flowers bright yellow; perianth 6-parted in two rows, spreading to 8 lines wide, the segments oblong, obtuse, translucent. Stamens 6, shorter than perianth, filaments flattened, bearded with long yellow hairs from near apex to base, in those opposite the outer segments less copiously so. Anthers oblong, dorsifixed, 2-celled. Ovary superior, 3-celled. Capsule enclosed by the withered perianth, turbinate or indistinctly 3-lobed, 3-celled, cells 2-seeded, seeds 3-angled, black, glabrous.

Habitat: NATAL: Inanda, 1800 feet alt. *Wood* 1008; Nkandhla, 4000 to 5000 feet alt. *J. Wylie* (*Wood* 8981). Also in Cape Colony, Orange River Colony and Transvaal.

This plant was at one time and perhaps still is plentiful on the river flat near the Lower Umgeni, a smaller form with glaucous leaves was collected by the writer in the midlands of the colony, and the form here figured and described has long been growing in the Botanic Gardens, and it in no way differs from the form collected at Nkandhla, or from the one collected near Umgeni, so that the plant has a very wide range. A closely allied species *B. natalensis*, Baker, was figured in Vol. I, pl. 30 of this work, the chief distinctions between the two species being the broad succulent leaves of *B. natalensis* and the narrow ones of the present species, the filaments being also much more densely bearded than in those of *B. natalensis*.

With the exception of two species in Australia the genus is quite African, two of the Cape species of which *B. asphodeloides* is one extend to Equatorial Africa.

Fig. 1, flower; 2, stamen from opposite inner lobe of perianth; 3, stamen from opposite outer lobe of perianth; 4, pistil; 5, cross section of ovary; *all enlarged*.

PLATE 502.

SENECIO PANICULATUS, BERG. (Fl. Cap. Vol. III, p. 397).
Natural Order, COMPOSITÆ.

A glabrous much branched undershrub. Stem erect, 1 to 3 feet high, branches virgate, elongate, rough, leafy to base of inflorescence. Leaves alternate, closely set on the branches, linear, finely and distantly serrate, minutely scabrous between the serratures, and on midrib beneath, margins revolute; 2 to $3\frac{1}{2}$ inches long, 1 line wide. Inflorescence a loose corymb, its lower branches up to 6 or 7 inches long, upper gradually shorter, pedicels $\frac{1}{2}$ to $1\frac{1}{2}$ line long with a few minute floral leaves. Heads discoid, many flowered, 3 to 7 lines diameter, buff coloured. Involucre calyced with many subulate bracteoles; involucral scales 16 to 24, dark tipped, narrow and tapering. Pappus of many minutely rough white bristles in several series. Corolla tubular, narrow at base, suddenly widening upwards, 5-toothed. Stamens 5, filaments dilated at apex, anthers truncate at base. Style arms truncate. Achenes finely striate, pubescent between the striæ.

Habitat: NATAL: Coast only. Near Durban, *Wood* 553; 11006, September. Also in Cape Colony.

This plant is a native of and confined to South Africa, in the Flora Capensis it is credited to Cape Colony only, but it is not at all uncommon in Natal near the sea coast, but so far as known to us it does not occur in the midlands or upper districts, it is a very variable plant as to foliage and size of the flower heads, the form figured and described here being the variety "reclinatus" which is said in the Flora Capensis to be "usually more robust with larger flower heads, but variable; leaves all linear-elongated, entire or the revolute margins toothed" while the type has leaves "either all quite entire, or some entire and some sparingly pinnati-partite, or all pinnati-partite, with few and distinct entire or toothed lobes."

Our plant is found in open ground and under light shade, and has no useful properties so far as known to us.

Fig. 1, floret; 2, stamens; 3, style; 4, achene; 5, involucre and calycle; *all enlarged*.



M.F.

Senecio paniculatus. Berg.



Clivia miniata, Regel.

PLATE 503.

CLIVIA MINIATA, REGEL. (Fl. Cap. Vol. VI, p. 229).
Natural Order, AMARYLLIDÆÆ.

A stemless plant bearing umbels of orange-red flowers. Leaves many, strap-shaped, but narrowing a little to base, acute at apex, bright green, glabrous, 16 inches to 2 feet long, 2 to 2½ inches wide above the middle. Peduncle a little shorter than the leaves, compressed, sharply 2-edged; umbels 12 to 20-flowered, pedicels 1 to 2 inches long; outer spathe valves oblong, acute, broad based, 1½ inches long, 7 to 8 lines wide; inner bracts narrow-linear, 1 inch or more long. Perianth erect, bright orange-red in upper half, lower portion with yellow central band and whitish margins, 6-lobed, tube very short, funnel-shaped, lobes oblanceolate, 2 to 2¾ inches long, the three inner ones ¾ inch wide at widest part, emarginate, the three outer ones 5 to 6 lines wide, minutely thickened at apex. Stamens shorter than perianth lobes, filaments compressed; anthers linear, versatile. Ovary oblong, bluntly 3-angled, 5 to 6 lines long, 3 lines wide; 3 celled, cells several ovuled; style slender as long as perianth segments, minutely trifid at apex. Fruit a bright red berry, seeds one or few, large, subglobose, bulbiform.

Habitat: NATAL: Coast to at least 3000 feet alt., usually under shade. Introduced into Europe in 1854, and has been hybridised and much improved in cultivation. It was formerly known as *Imantophyllum miniatum*, (Hook) but the genus *Imantophyllum* has been now abolished in favour of the older genus *Clivia* which includes three species only, all natives of South Africa.

Fig. 1, umbel with portion of peduncle; 2, leaf; 3, cross section of peduncle; 4, spathe valve; 5, bract; 6, style and stigmas; 7, cross section of ovary; figs. 1 to 5 natural size; figs. 6 and 7 enlarged.

PLATE 504.

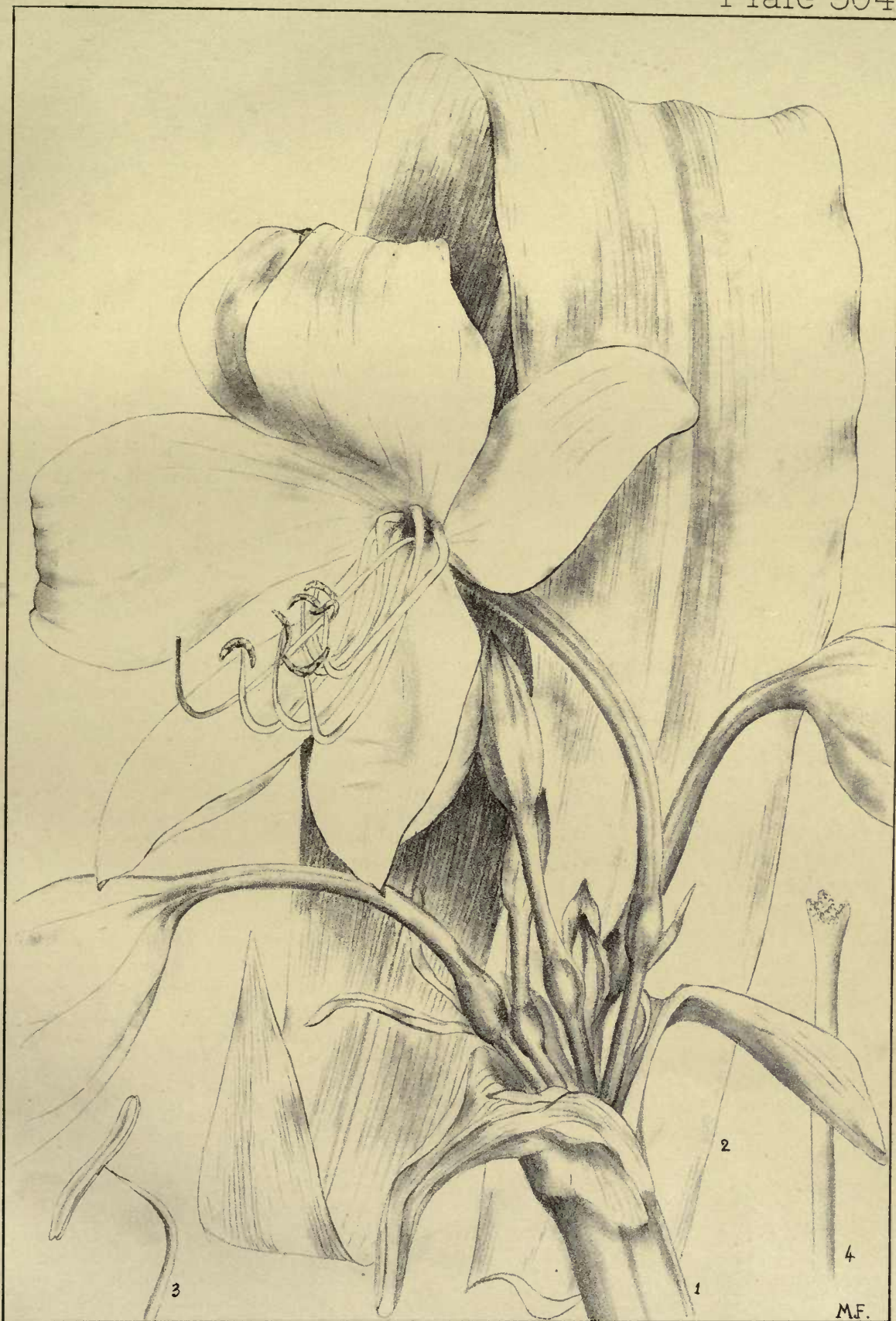
CRINUM MOOREI, HOOK, f. (Fl. Cap. Vol. VI, p. 200).
Natural Order, AMARYLLIDÆ.

Bulb ovoid, "copiously stoloniferous" with a neck 1 foot or more long. Leaves 12 to 15 to a bulb, widely spreading, recurved, narrowly oblong, tapering to each end, acute at apex, dark green, margins quite entire, 3 feet long, up to 5 inches broad in middle, texture of lamina thin, midrib rather stout at base where it is about $2\frac{1}{2}$ inches broad. Peduncle up to 3 feet long, stout, green, but reddish brown at base. Flowers 6 to 10 in each umbel, the buds tinged with pink, mature flowers pure white or slightly tinged with pink; pedicels 2 to $3\frac{1}{2}$ inches long; spathe-valves oblong, obtuse, very broad based, longitudinally infolded half way down from apex, 4 inches long, $2\frac{1}{2}$ inches wide at base, bracts linear, 3-4 inches long. Perianth tube $2\frac{1}{2}$ to $3\frac{1}{2}$ inches long, limb 6-parted, segments oblong, narrowed to both ends, acute and thickened at apex, subequal or the outer slightly narrower, up to 3 inches long, $1\frac{1}{4}$ to $1\frac{3}{4}$ inch broad above the middle. Stamens 6, on throat of perianth tube, filaments white, slightly tinged with pink, declinate, strongly recurved, $2\frac{1}{2}$ to $2\frac{3}{4}$ inches long; anthers linear, dorsifixed, versatile, at first straight, 1 inch long, afterwards strongly curved and much contracted, pollen white. Ovary inferior, oblong, $\frac{1}{2}$ inch long, 3-celled, ovules few in each cell immersed in the thick placenta; style a little longer than the perianth lobes, filiform, pink in upper portion, minutely 3-lobed at apex. Fruit a large globose capsule bursting irregularly, seeds large, bulbiform.

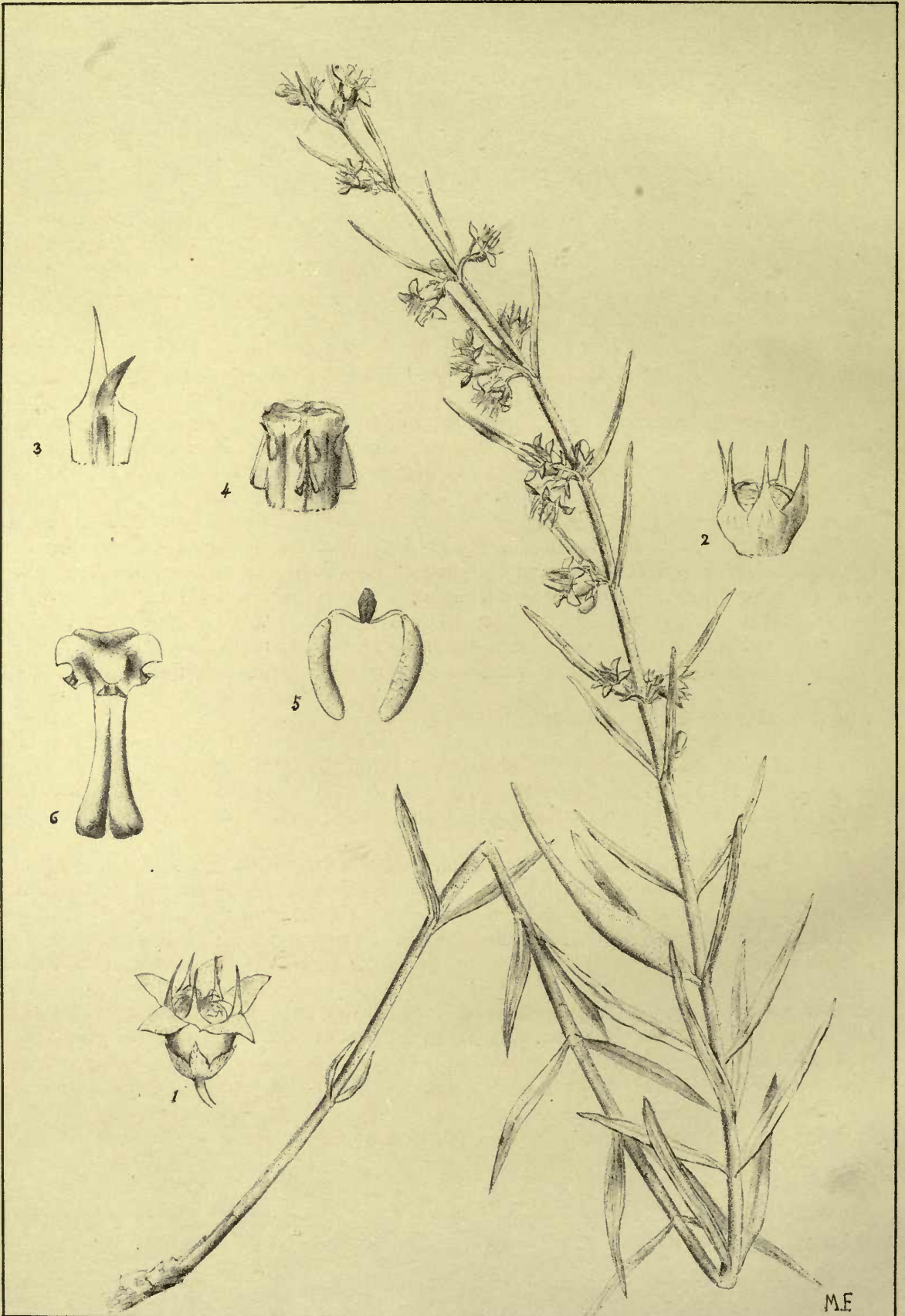
Habitat: NATAL only. Inanda 1800 feet alt., Wood 1164, November; without precise locality, Mrs Saunders; Zululand, J. Wylie. Drawn and described from the Inanda specimen which flowered in the Botanic Gardens in September.

The genus *Crinum* according to the Genera Plantarum includes about 60 species which are widely dispersed in tropical and subtropical regions, in South Africa we have 8 species 4 of which are found in Natal and Zululand, *C. Moorei* being so far as at present known confined to Natal. It is usually found in light shade and often in rocky places, the bulbs being crowded together and more or less above the surface of the ground, differing in this respect from the other Natal species whose bulbs are solitary. A synonym is *C. Mackoyanum*, and it has been known to gardeners as *C. Colensoi* and also as *C. Mackenii* and *C. natalensis* but it has never been described under these names. The Flora Capensis says of it "Our first knowledge of it was from a sketch sent by Bishop Colenso in 1858. *C. Schmidtii*, Regel, Gartenflora Vol. XXXI (1882) 34, t. 1072 is probably a white flowered variety of this species." It was figured in the Botanical Magazine for 1874, and is there described and shown as having a perianth "bright rose red" the form here described is most likely the one figured in the "Gartenflora" as *C. Schmidtii*. The Botanical Magazine also says "a closely allied species to this is the *C. Colensoi* of Natal which will shortly be figured" this proved as above stated to be only a variety.

Fig. 1, umbel slightly reduced; 2, leaf, half natural size; 3, stamen, natural size; 4, style and stigma, enlarged.



Crinum Moorei, Hook. f.



Schizoglossum tubulosum Schltr.

PLATE 505.

SCHIZOGLOSSUM TUBULOSUM, SCHLTB. (Fl. Capensis Vol. IV, p. 636.)
Natural Order, ASCLEPIADEÆ.

Bulb, small, ovoid, (not seen by us) Stem solitary, simple, (or in one of our specimens branched, $2\frac{1}{4}$ inches below apex) 12 to 27 inches high, puberulous, internodes, $\frac{2}{3}$ to $1\frac{1}{4}$ inch long. Leaves erect, $\frac{1}{2}$ to $1\frac{1}{2}$ inch long, $\frac{1}{3}$ to $\frac{2}{3}$ line broad, linear, acute, margins revolute, puberulous above and on the midrib beneath. Umbels 5 to 9, sessile at the upper nodes, 1 to 7-flowered, pedicels $1\frac{1}{2}$ to 2 lines long, thinly and appressedly puberulous. Sepals $1\frac{1}{2}$ line long, $\frac{3}{4}$ line broad, ovate-lanceolate, acute, pubescent. Corolla campanulate, greenish; tube $1\frac{1}{4}$ to $1\frac{1}{2}$ line long, glabrous; lobes erectly spreading, 2 lines long, 1 to $1\frac{1}{4}$ broad at base, ovate-oblong to ovate-lanceolate, acute, margins reflexed, thinly pubescent on the back, puberulous from base to apex (in our specimens). Corona lobes twice as long as staminal column, the basal portion sub-quadrate, $\frac{3}{4}$ line long, about 1 line broad at the top, slightly narrowed below, with an appendage and two parallel keels on the inner face, abruptly narrowed or contracted at the top into an erect subulate point, 1 line long, with the lateral angles or shoulders square or very slightly projecting horizontally; appendage arising at the base of the point, nearly 1 line long, linear-subulate, very acute, curved over the staminal column, the minute teeth alternating with bases of corona lobes, very short, obtusely rounded. Staminal column $\frac{3}{4}$ line long; anther appendages broadly ovate, subacute, with their tips inflexed over the raised rim of the subtruncate or slightly depressed style-apex. Follicle lanceolate, tapering to a long subacute beak, $1\frac{3}{4}$ inch long, minutely and softly puberulous.

Habitat: NATAL: Attercliffe near Durban, 800 ft. alt. *Sanderson* 449, partly; Inanda 1800 ft. alt. *Wood* 740, December; near Newcastle 4200 ft. alt., *Schlechter* 3410; Zululand 500 to 800 ft. alt., December, *Wylie* (*Wood* 10686).

According to the *Flora Capensis* this genus includes about 120 species, of which 87 are South African, 40 of which have been collected in Natal, the remainder are Tropical African, the genus is rather a difficult one as the species in many instances are very similar to each other in general appearance, Mr. N. E. Brown who has worked out the whole of them for the Floras of South and Tropical Africa says, "It is frequently scarcely possible to name a species by comparison without first dissecting the flowers" since "the external appearance of the stem leaves and flowers is often alike in a whole group of species, while the structure of their corona-lobes, and often the staminal column is entirely different." The genus is, however, a very interesting one and we have thought it advisable to illustrate a few, so as to show some of the differences in the structure of the flowers. All of the species have a milky sap, and none of them are of any economic value.

Fig. 1, flower; 2, corona; 3, a corona lobe; 4, staminal column; 5, pollinia; 6, ovaries and style-apex; *all enlarged*.

PLATE 506.

SANDERSONIA AURANTIACA, HOOK. (Fl. Capensis Vol. VI, p. 527.)
Natural Order, LILIACEÆ.

Rootstock tuberous, various in shape, usually terete, from 1 to 3 inches long. Stem erect, simple, 1 to 2 feet long, leafy to apex, except for a short distance from the base. Leaves alternate, ascending and recurved, sessile, lanceolate or lanceolate-oblong, margins recurved; quite glabrous, midrib prominent beneath, with two less prominent lateral veins; 2 to 5 inches long, $\frac{1}{2}$ to 1 inch broad. Flowers solitary from axils of the upper leaves, on cernuous slender pedicels, $\frac{1}{2}$ to 2 inches long. Perianth gamophyllous, orange red, $\frac{3}{4}$ to 1 inch long, urceolate, persistent, with 6 very short triangular segments, the much dilated tube furnished at the base with 6 short saccate spur-like projections. Bracts none. Stamens 6, hypogynous, much shorter than perianth, filaments filiform, shorter than the ovary; anthers versatile, dehiscent extrosely. Ovary superior, oblong, 3-lobed, 2-3-lines long, 3-celled, ovules many, superposed. Style cylindrical, 3 lines long, 3-lobed, lobes linear, recurved, stigmatose internally. Fruit not seen by us.

Habitat: NATAL: Inanda, 1800 ft. alt., Wood 459; Lower Tugela, November, Wood 10,122. *Sutherland, Sanderson, Gerrard* 527.

This genus contains one species only which is confined to South Africa, and has been noted in Griqualand East, and Pondoland as well as in Natal. It is usually found in open ground, and generally in the same districts as *Littonia modesta*, Hook (Plate 507) which plant, however, has a much wider range. The genus is named after the late John Sanderson, an old and respected Durban colonist, who was at one time editor and proprietor of the *Colonist*, and who collected and sent to Europe many specimens of the Natal Flora, most of them at that time rare and many new to science.

Fig. 1, a flower with portion of perianth removed to show the stamens and pistil; 2, pistil; 3, cross section of ovary; *all enlarged*.



M.F.

Sandersonia aurantiaca, Hook.



M.E.

Liltonia modesta, Hook.

PLATE 507.

LITTONIA MODESTA, HOOK. (Fl. Cap. Vol. VI, p. 527).
Natural Order, LILIACEÆ.

Rootstock tuberous, more or less bluntly angled. Stem usually simple, sometimes branched, erect or sarmentose, leafy to apex, naked below, flowers solitary in axils of upper leaves, yellow-orange. Leaves lanceolate, base rounded, sessile, apex tendril bearing, the lower ones opposite, central ones in whorls of 3 to 6, uppermost similar, opposite, or occasionally alternate; 3 to 6 or more inches long, $\frac{3}{4}$ to $1\frac{1}{4}$ inch wide at base. Flowers pedicillate, pedicels curved, 1 to 2 inches long. Perianth $\frac{3}{4}$ to $1\frac{1}{4}$ inch long, marcescent, cut nearly to base into 6 equal, oblong-lanceolate ascending acute segments. Stamens 6, hypogynous, shorter than perianth; filaments filiform; anthers linear-oblong, versatile, introrsely attached near the base, dehiscing extrorsely. Ovary sessile, oblong, 3-celled, deeply trisulcate; ovules many, superposed; style short, erect, cylindrical, with 3 falcate branches, stigmatose internally. Capsule subcoriaceous, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long, $1\frac{1}{4}$ inch wide, deeply 3-lobed, septicidally valved; seeds numerous, ovate but angled by pressure, quite glabrous, dull red-brown, 3 lines long.

Habitat: NATAL: Common in coast and midland districts, Inanda 1800 ft. alt., Wood 1186, December; Nottingham, *Buchanan*; near Tongaat, *McKen*. Also in Orange River Colony and Transvaal.

The genus *Littonia* includes 7 species, of which 4 are Tropical African, two Arabian, and the present species which is confined to South Africa. It is often found in the same localities as *Sandersonia aurantiaca*, (Plate 506) but is at once distinguished by its climbing habit, and shape of its corolla. In cultivation it frequently produces abnormal flowers much larger than here described, with 6 to 9 perianth lobes spreading to $2\frac{1}{2}$ inches diameter, and the capsule is sometimes 4 or more lobed.

Fig. 1, flower, two perianth lobes removed to show stamens; 2, stamen; 3, pistil; 4, unripe capsule; 5, cross section of same; Figs. 1, 4, 5, *natural size*; Figs. 2 and 3, *enlarged*.

PLATE 508.

CORDIA CAFFRA, SOND. (Flora Capensis Vol. IV, Sec. 2, p. 4.)
Natural Order, BORAGINÆÆ.

A shrub or small tree, often not more than 6 to 8 feet high, but occasionally reaching to 30 or 40 feet, with stem 10 to 15 inches in diameter, branches glabrous, terete. Leaves alternate or scattered, on long slender petioles, differing in shape from ovate to ovate-lanceolate, serrate or dentate, but differing in number, shape and depth of the teeth; tapering to both ends, mature ones quite glabrous, 2 to $4\frac{1}{2}$ inches long, $1\frac{1}{2}$ to $1\frac{3}{4}$ wide in centre; petiole up to $2\frac{1}{2}$ inches long. Inflorescence paniculate, peduncles short, flowers yellow-green. Calyx tubular, minutely and irregularly 3-4-lobed, glabrous externally, pubescent internally, lobes rounded, the whole calyx 2 to 3 lines long, said to be enlarged in fruit, (our specimens have flowers only). Corolla gamopetalous, 3-4-lines long, greenish yellow, irregularly 4-5-lobed, the lobes oblong, glabrous. Stamens 4, on corolla tube at throat, about half or more the length of corolla lobes; filaments equalling or a little longer than the anthers. Ovary superior, ovate, glabrous, 4-celled, cells 1-seeded; style exserted, 2-fid, its branches again more or less deeply 2-fid. Fruit drupaceous, of 4 or fewer 1-seeded cells, (not seen by us).

Habitat: NATAL: Inanda 1800 ft. alt., Wood 682; near Durban, Gueinzius 97; Wilms 1914; and without precise locality Gerrard, 263.

The genus *Cordia* includes some 250 species found in warm regions of both hemispheres, the above described being the only South African one. Sim says the timber is soft, tough, used for yokes, fencing poles, &c., and that it lasts well underground, the trunks are often inclined and seldom quite straight. It is known to the natives as um-Nofunofu, and in the early days of the colony the wood was used by them for the purpose of obtaining fire by strong friction with a harder wood.

The specimen here figured was gathered at the edge of a wood on the coast, and almost if not quite within the reach of salt spray in times of strong wind and rough sea.

Fig. 1, calyx; 2, corolla opened showing stamens; 3, pistil; 4, cross section of ovary; all enlarged.



M.F.

Cordia caffra, Sond.





M.F.

Lotononis dichilooides Sand

PLATE 509.

LOTONONIS DICHILOIDES, SOND. (Fl. Cap. Vol. 2, p. 52.)
Natural Order, LEGUMINOSÆ.

An erect slender undershrub bearing a profusion of white flowers. Stem finely and softly pilose, terete, green, 2 feet to 2 feet 6 inches high, densely clothed in the lower half with short filiform branchlets, which are 2 to 3 inches long in lower portion, gradually shorter upwards; densely leafy throughout except at the very base.

Leaves subfascicled, trifoliolate, leaflets very narrowly spathulate or oblanceolate, terminal one 6 to 10 lines long, 1 to 2 lines wide, lateral ones 5 to 7 lines long, 1 line wide, mucronulate, pellucid dotted, minutely pilose beneath, and ciliate with subdistant white hairs, glabrous above; all more or less pellucid at junction with petiole; petiole 4-6 lines long, channelled above; stipules linear, leaflike equalling or slightly exceeding the petiole. Flowers white, carina tinged with pink at apex. Calyx gamosepalous, 5-toothed, the teeth all subulate, the lowest longest, the 4 upper ones approaching in pairs. Corolla papilionaceous, petals clawed, glabrous, vexillum broadly oblong, carina obtuse. Stamens monadelphous, shorter than carina, and enclosed within it. Legume linear $\frac{3}{4}$ to 1 inch long, pilose when young, mature ones glabrous or nearly, so many seeded.

Habitat: NATAL: Coast districts and Zululand, Mount Moreland 1-200 ft. alt., Wood 958, November; near Tugela River, March, Wood, Zululand 500 ft. alt., Haygarth (Wood 1107.)

A rather pretty plant which flowers very profusely in the spring and summer months; it is quite a coast plant, and is sometimes found in large numbers on neglected native gardens and similar places; the flowers though to all appearance white, have often a faint bluish tinge, but always have the carina tipped with colour which is intensified by the yellow anthers showing plainly through the semi-transparent carina.

Fig. 1, calyx; 2, vexillum; 3, carina; 4, ala; 5, stamen; 6, pistil; 7, young legume, one valve removed showing ovules; *all enlarged*.

PLATE 510.

XYSMALOBIUM CONFUSUM, SCOTT ELLIOT. (Fl. Cap, Vol. IV, Sec. 1, Part IV, p. 574.)
Natural Order, ASCLEPIADEÆ.

An erect unbranched plant bearing flowers which are dull greenish brown with darker markings. Stems erect, 2-3 feet high from a woody rootstock, 4-5 lines thick, pubescent along two broad lines. Leaves opposite, exstipulate, very shortly petiolate, 2-4 inches long, $1\frac{1}{2}$ - $2\frac{1}{2}$ inches broad, oblong to elliptic-oblong, coriaceous, shortly and abruptly cuspidate-mucronate, abruptly rounded at base, margins finely scabrid, surfaces glabrous, midrib thick, whitish, very conspicuous, with numerous secondary veins at almost right angles to it, and a very fine marginal vein. Inflorescence umbellate, umbels axillary, subsessile, many-flowered, pedicels 6 to 9 lines long, minutely pubescent "sepals 3-4 lines long, $\frac{3}{4}$ lines broad at the ovate-oblong base, above which the margins are incurved, forming a channelled subulate point, spreading, glabrous, sparingly ciliate. Corolla 5-lobed almost to the base, quite glabrous, lobe suberect, 4-5 lines long, $2\frac{1}{2}$ to $2\frac{3}{4}$ lines broad, oblong-ovate, obtuse with a minute oblique apical notch, margins reflexed or revolute. Corona lobes arising at the base of the staminal column and about half as long as it, fleshy, scarcely 1 line long about $1\frac{1}{4}$ line broad, broadly cuneate, truncate with a minute quadrate lobule at the base, and a fleshy prominent keel at the top on the inner face, triangular when seen from above and as if formed from the inflexed adnate apex. Staminal column $1\frac{1}{2}$ line long, constricted under the anthers; anther appendages subreniform, obtuse, inflexed upon the outer part of the broad style-apex, the centre of which is produced slightly beyond them in a very short pentagonal truncate column, follicles not seen."

Habitat: NATAL: Highlands, *Gerrard* 1282; Inanda, *Wood* 1163 (November); Zululand, *Haygarth* (in Herbarium, *Wood* 11008) November; Koma, Zululand, December, *Wood* 10840.

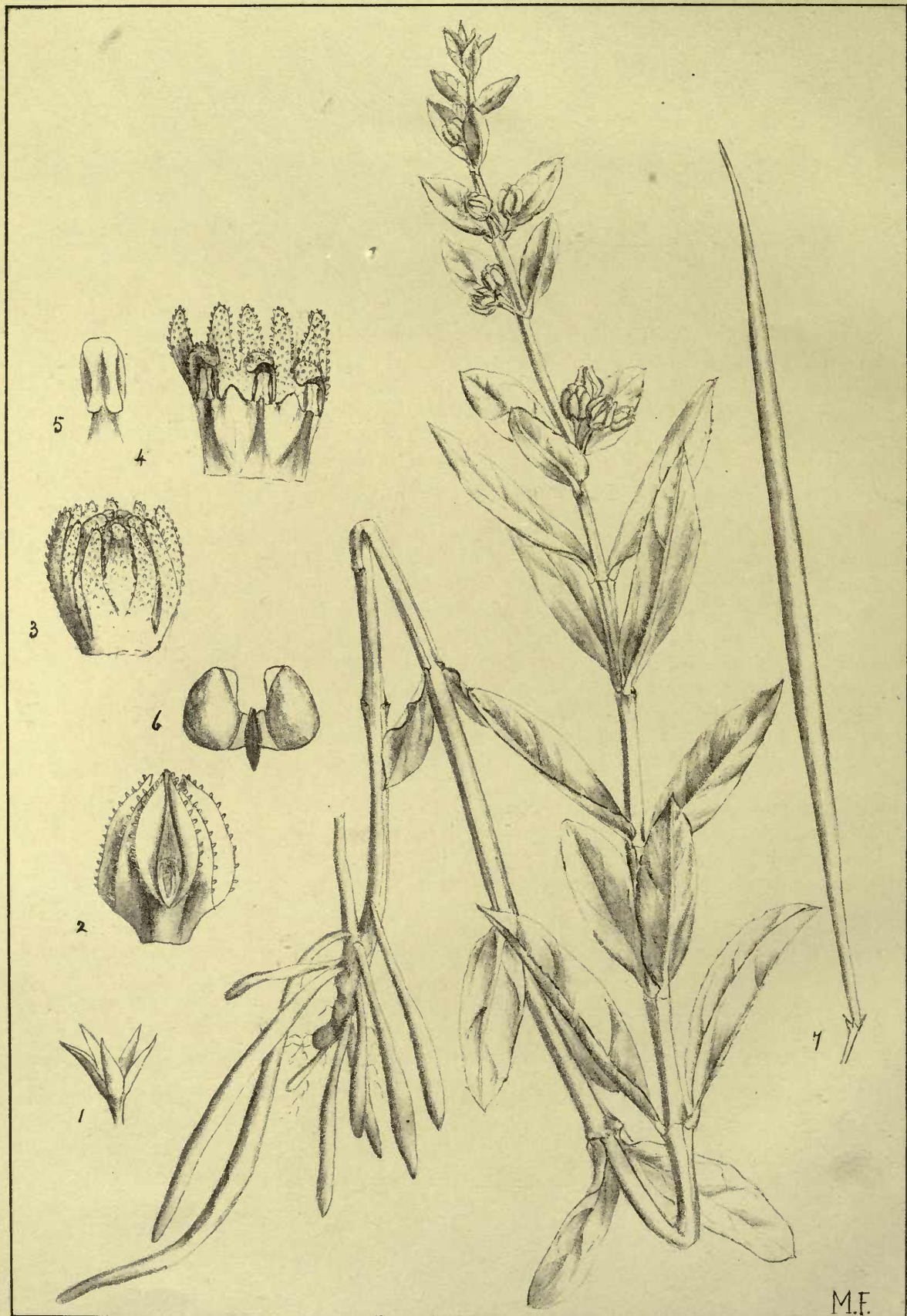
This genus includes about 38 species, 9 of which are natives of Natal, the remainder of South and Tropical Africa; in general appearance many of the species resemble different species of *Asclepias*, and it is only on dissection of the flowers that they can be separated from that genus or from *Pachycarpus*. The concluding and greater part of the above description is taken verbatim from *Mr. Brown's* description in the *Flora Capensis*, the only difference being that in the specimens from Zululand *Wood* 10,840 and 11,008 the umbels are shortly pedunculate and the sepals are flat, not at all channelled. Since the *Part of the Flora Capensis* was published another undescribed species has been collected by the writer near Van Reenen.

Fig. 1, corona and staminal column, corolla removed; 2, corona lobe, inner view; 3, pollinia; 4, ovaries and style apex; all enlarged.



MF

Xysmalobium confusum, Scott Elliott.



M.F.

Brachystelma Sandersoni N.E. Brown

PLATE 511.

BRACHYSTELMA SANDERSONI, N. E. BROWN. (Fl. Cap. Vol. IV, p. 850-1.)
Natural Order, ASCLEPIADEÆ.

An erect undershrub, reaching to 18 or 20 inches in height. Rootstock a cluster of long fleshy, terete, or narrowly fusiform roots. Stem simple or occasionally branched in upper portion, leafy above, naked in lower part, glabrous. Leaves opposite, very shortly petiolate, linear, linear-oblong or oblong, margins entire, minutely scabrous on margin and midrib beneath, otherwise quite glabrous. Flowers fascicled in axils, solitary, or from 2 to 6 together, pedicels 1 to 3 lines long, glabrous. Sepals 1 line long, lanceolate, acute, glabrous. Corolla gamopetalous, much shorter than staminal column, tube short, limb 5-lobed, lobes free at apex, erect, $1\frac{1}{4}$ -2-lines long, 1 line broad at base, ovate or oblong, acute, the sides recurved forming a ridge down the inner face, surfaces glabrous, margins ciliate with minute thick hairs, white, tipped and occasionally margined in upper portion with pink. Corona double, outer divided into 10 erect teeth; arising near base of staminal column, and equalling it in length, lobes linear, ciliate, and covered with minute thick or papilla-like hairs, white; inner corona-lobes oblong or oblong linear, minutely puberulous with smaller hairs above, white. Pollinia ascending, attached in pairs by a very short, broad caudicle; broadly oblong, pellucid on inner margin from apex nearly to the caudicle. Follicles linear, tapering towards apex, terete, glabrous, 4 to 6 inches long 1 to $1\frac{1}{2}$ line wide in centre.

Habitat: NATAL: Tugela, Gerrard 1805; Wentworth, Sanderson 436 partly; Verulam, 300 to 500 feet alt., Wood 1161, November; Clairmont, 20 to 30 feet alt., Wood 3906, December; Winkle Spruit, 30 to 50 feet alt., Wood 11009, November; without precise locality, Gueinzus; Sanderson 915.

A somewhat inconspicuous plant growing usually in sandy soil, and amongst grass, it has never to our knowledge been collected far from the coast, and would seem to be confined to Natal as no other records are given for it in the Flora Capensis. It is named after the late John Sanderson who was at one time President of the Durban Botanic Society, and a collector of plants in the early days of the colony.

Fig. 1, calyx; 2, corolla; 3, corona; 4, portion of corona showing stamens, inner view; 5, a stamen; 6, pollinia; all enlarged; 7, follicle, natural size.

PLATE 512.

RICHARDIA REHMANNI, N. E. BROWN. (Fl. Cap. Vol. VII, p. 36, 37.)
Natural Order, AROIDEÆ.

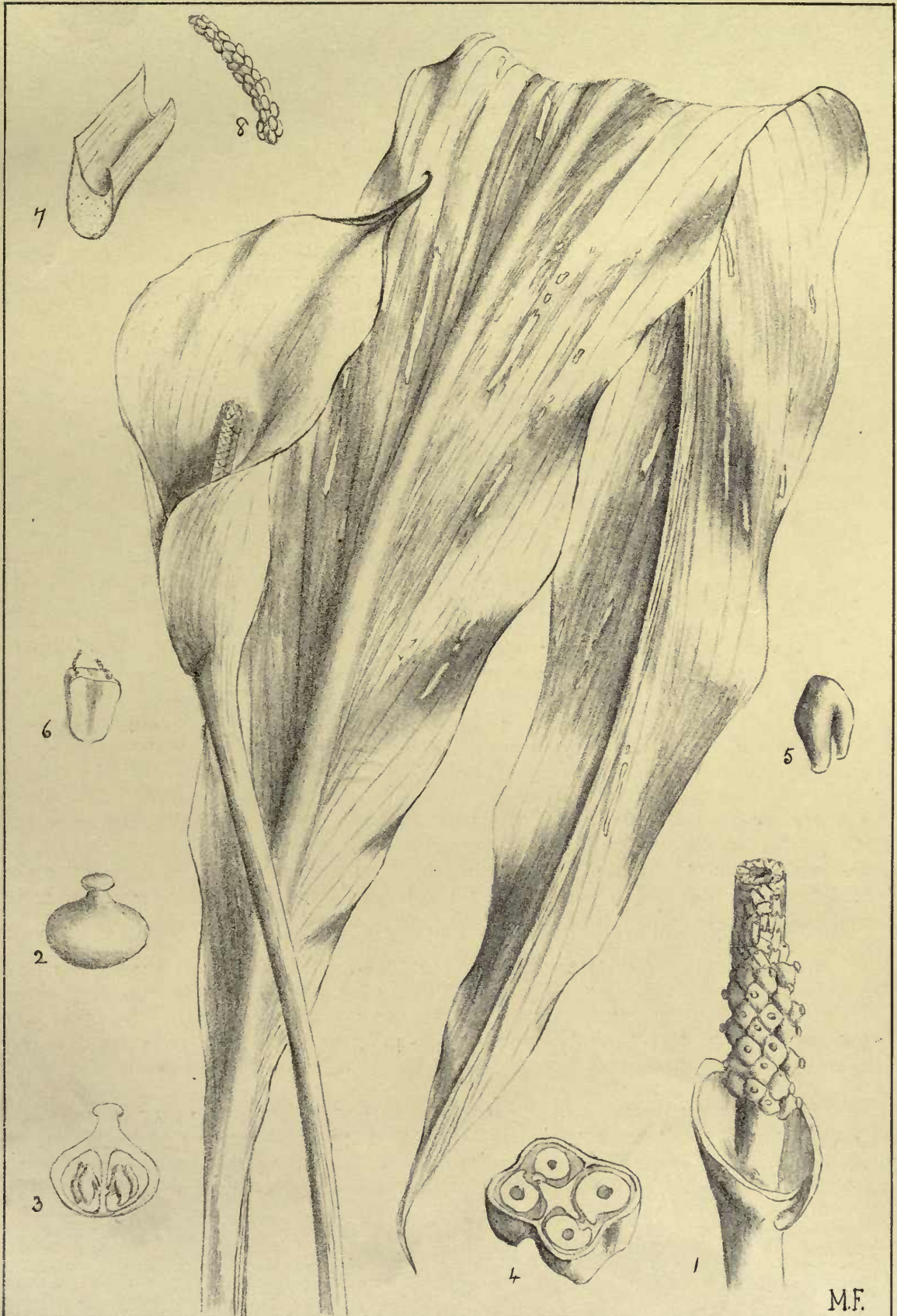
A stemless herb. Leaves broadly lanceolate-acuminate, entire, glabrous and shining on both surfaces, quite green, or with linear white, semi-transparent markings which are parallel to the nerves, margins undulate, midrib stout; 12 to 20 inches long, 2 to 3 inches wide in central portion, gradually narrowed to the stout petiole, which is 6 to 12 inches long, rounded on back, deeply channelled on the face for its whole length. Scape shorter than the leaves, terete, glabrous, green. Spathe reaching to about $4\frac{1}{2}$ inches long, erect, limb oblique, recurved, with a subulate point; varying from almost white to deep rose colour in the upper and exposed portion, white to greenish-yellow at the base, and without dark centre, the subulate apex green; externally green at base. Spadix stipitate, shorter than the spathe, the basal portion with female flowers, the upper portion male, the female flowers spirally arranged; without perianth, ovary angular from pressure, 2-celled, cells 2-3-ovuled, style very short, capitate; male flowers, stamens numerous, crowded together, not spirally arranged; anthers sessile, oblong, compressed, truncate, opening by terminal pores, and emitting the pollen in sausage-like strings. Fruit a berry, seeds ovoid or subglobose.

Habitat: NATAL: Stony hill near Glencoe, 4000 to 5000 feet alt., *Wood* 5204; dry hills near Newcastle, *Rehmann* 80. Also in Transvaal.

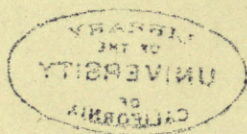
This plant was first found in Transvaal, and tubers of it were sent to England by the late R. W. Adlam, but when they flowered in England they "had white spathes without any tinge of rose," and when grown in Natal the same thing occurred; it was also sent to Europe by Mr. De Waal from Transvaal. The plant was afterwards collected by the writer on the Biggarsberg in 1893, the colour of the spathes varying from light to very dark pink or red, tubers were brought to Durban and planted at the Botanic Gardens, and some were sent to Europe; those that flowered in Durban bore spathes which only showed a trace of pink, and the same thing again occurred at Home.

Until last year the plants only showed a trace of pink, but since then and during the present season (1908) the colour of those in the Gardens has been almost as good as the writer first saw it in their native habitat. The plant was also gathered by Mr. W. J. Haygarth on Majuba, and by Mr. St. Vincent Erskine near Vryheid, both of these specimens are in the Colonial Herbarium.

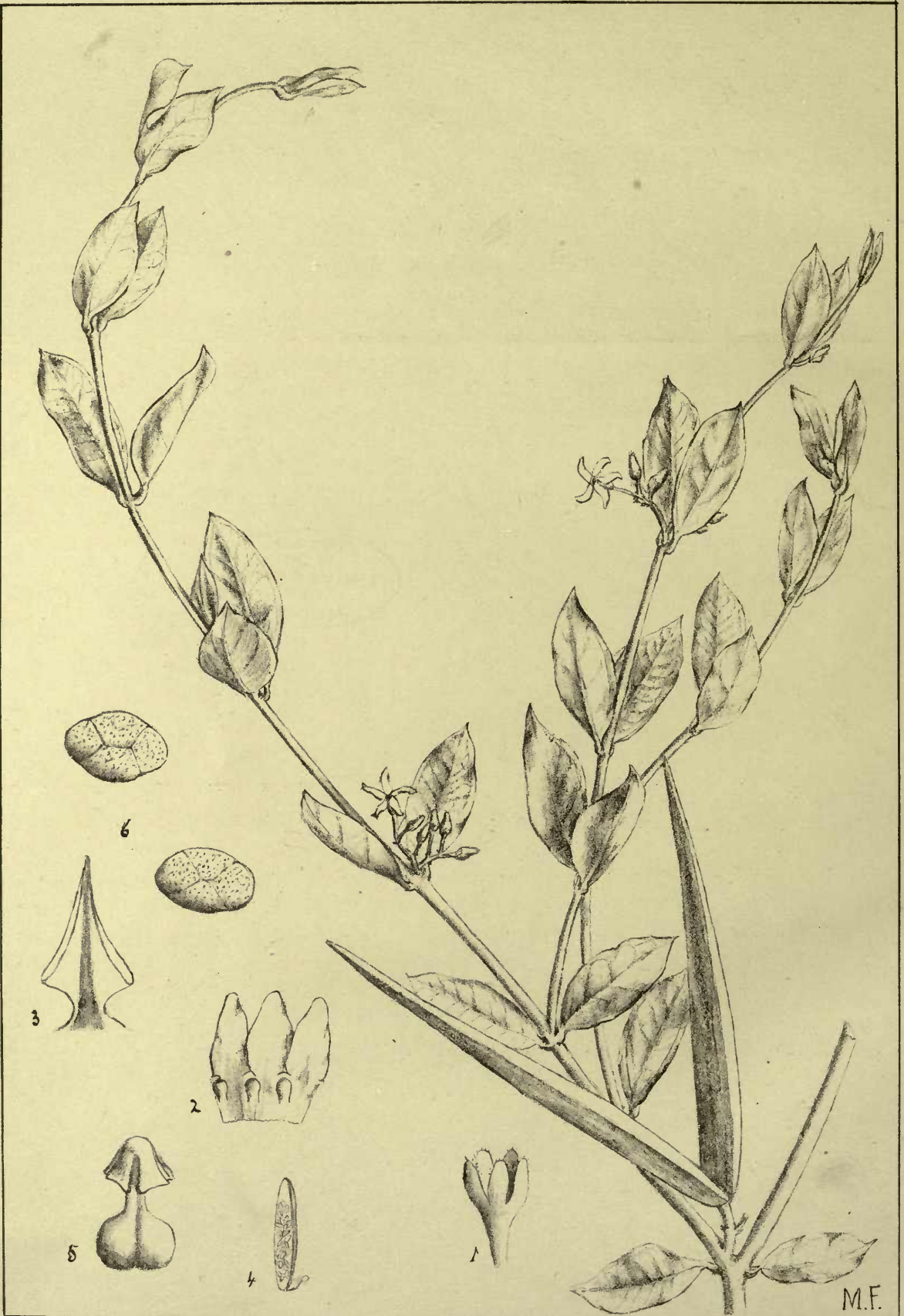
Fig. 1, lower portion of spadix, upper part of spathe removed to show staminate and pistillate flowers, and stipes; 2, pistil; 3, longitudinal section of same; 4, cross section of ovary; 5, ovule; 6, stamen, *all enlarged*; 7, cross section of petiole, *natural size*; 8, pollen as seen issuing from anther, *enlarged*.



Richardia Rehmanni, N.E. Brown.







Cryptolepis oblongifolia, Schlechter.

PLATE 513.

CRYPTOLEPIS OBLONGIFOLIA, SCHLTR. (Fl. Cap. Vol. IV, Sec. 1, Part IV, p. 529.)
Natural Order, ASCLEPIADEÆ.

An erect much branched shrub, branches long and slender, terete, dark coloured, very minutely rough, scarcely scabrous. Leaves opposite ascending, glabrous, paler beneath, oblong, elliptic-oblong or lanceolate, quite entire, cuneate at base, apiculate; 1-2 inches long, $\frac{1}{4}$ to $\frac{2}{3}$ inch broad. Inflorescence axillary, cymose, cymes subsessile trichotomous, $\frac{1}{2}$ to $\frac{3}{4}$ inch diameter; bracts minute, $\frac{1}{2}$ to 1-line long, soon deciduous, pedicels 1 to $1\frac{1}{2}$ line long. Sepals under 1 line long, oblong, obtuse, minutely ciliate at apex. Corolla glabrous, yellow-green, tube 1 line long campanulate, lobes $1\frac{1}{3}$ to $1\frac{3}{4}$ line long, $\frac{2}{3}$ to $\frac{3}{4}$ line broad, oblong, obtuse; corona lobes inserted at middle of corolla tube, $\frac{1}{4}$ to $\frac{1}{3}$ line long, subterete or clavate, truncate, obtuse, fleshy; anthers deltoid, very acuminate, filaments free, the connective produced into a fleshy apiculus united to the dilated part of the style at the base, more or less connate in a cone. Pollen granular, each granule formed of 4 grains united; pollen carrier more or less spathulate holding the pollen grains in the concave portion. Style not exceeding the anthers. Follicles 3 to 4 inches long about $\frac{1}{4}$ inch diameter in centre, gradually tapering from near the middle to a subacute point, green, glabrous. Seeds about 4 lines long, 1 line broad, narrowly oblong, convex on one side, concave with a central ridge on the other, minutely scabrous, crowned with a tuft of hairs.

Habitat: NATAL: Near Umgeni, *Krauss* 132; Inanda 1800 feet, *Wood* 446; Field's Hill 1400 feet alt., January, *Wood* 11073; Palmiet, *Gerrard* 10; 595; 132. Also in the Transvaal and Rhodesia.

This plant has until very lately been known as *Ectadiopsis oblongifolia* (*Benth.*), and under that name has been distributed by the writer, but the South African species of the Order Asclepiadeæ have been lately revised and published in the Fl. Capensis, with the result that this species was transferred to *Cryptolepis*. The plant is not uncommon in coast and midland districts at edges of woods and stony places; the flowers are not conspicuous, and the bark of the stems and branches contains a strong fibre, but it is very doubtful whether the cultivation of the plant on this account would be remunerative.

Fig. 1. calyx; 2, portion of corolla showing 3 corona lobes; 3, anther; 4, pollen-carrier; 5, ovaries and style apex; 6, pollen granules; *all enlarged*.

PLATE 514.

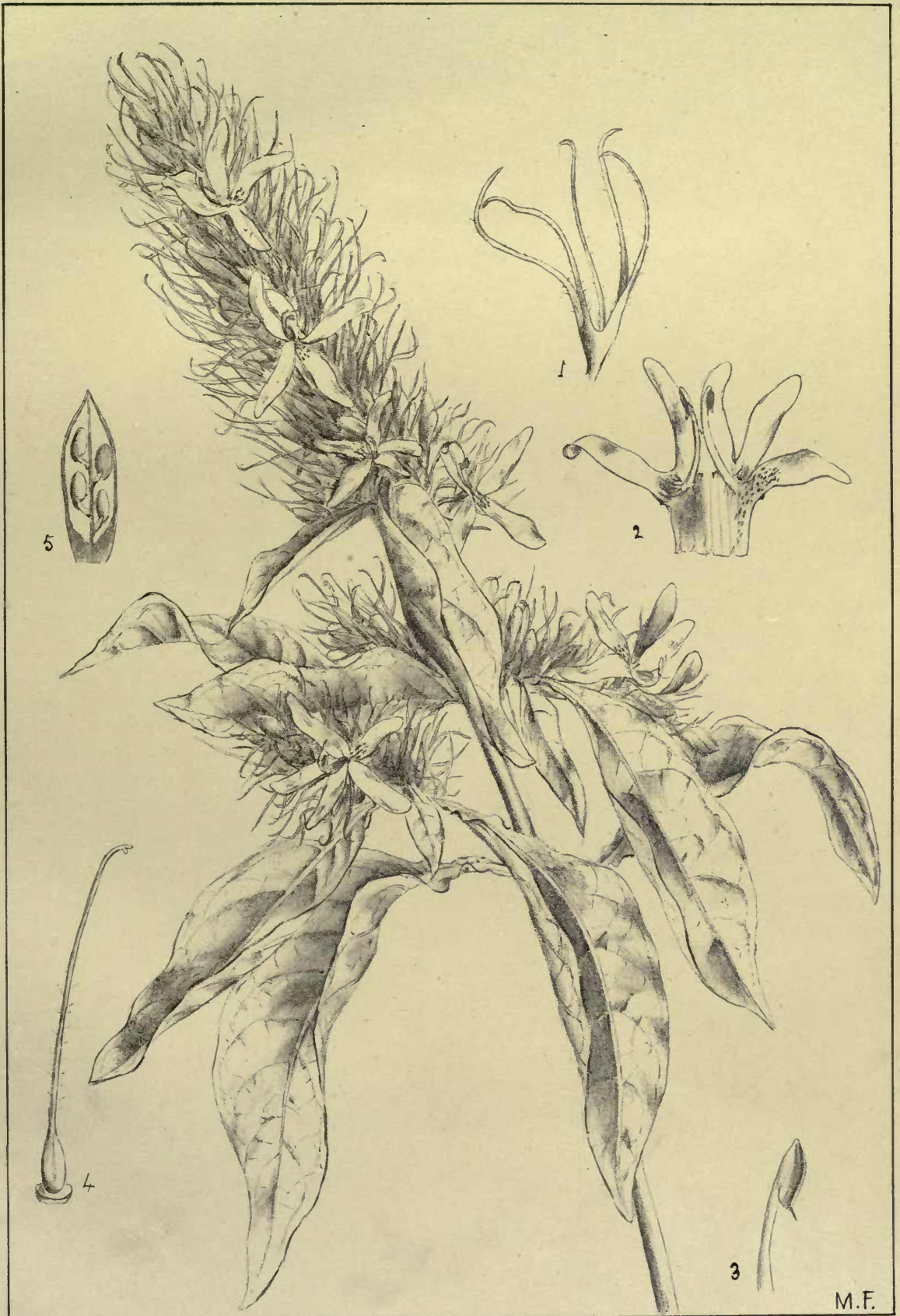
RUTTYA OVATA, HARV. (Fl. Cap. Vol. V, p. 55.)
Natural Order, ACANTHACEÆ.

A glabrescent rambling much branched shrub, branches a little compressed and thickened at nodes, glabrous. Leaves opposite, ovate-acuminate, tapering to base and decurrent on the petiole nearly to base, the decurrent portion strongly undulate, the blade glabrous, entire, 3 to 4 inches long, including the petiole, 1 to 2 inches wide. Inflorescence axillary and terminal, appearing like a densely flowered comose spike, but really composed of a large number of few flowered cymes, the long sepals giving the comose appearance; the whole inflorescence reaching to 4 inches long by $1\frac{1}{2}$ to 2 inches wide. Bracts 2, linear-subulate, up to 6 lines long, 1 line wide at base, bracteoles 2, similar to the bracts. Calyx 5-parted nearly to base, lobes equal, linear-subulate, up to 11 lines long; peduncle bracts and calyx minutely pubescent. Corolla bilabiate, upper lip deeply 2-lobed, lower 3-lobed, lobes linear-oblong, spreading, white, lowest lobe with a few purple spots at base; whole corolla spreading to 14 lines long. Stamens 2, inserted at throat of corolla, shorter than its upper lobe, filaments white; anthers dark coloured, 1-celled. Style longer than the stamens, shorter than the corolla, minutely 2-lobed. Ovary superior 2-celled, cells 2-ovuled. Capsule clavate, acute, 4 seeded in the upper portion.

Habitat: NATAL: Umhloti River 500 feet, February, *Wood* 1224; near Verulam 200 feet, February, *Wood* 462; near Bellair 250 feet, January, *Wood* 11067; also collected by *Williamson*, *Drege*, *Sutherland*, *Peddie* and *Gueinius*. Also in Transvaal.

This genus includes 5 species, *R. ovata* being the only one at present known in South Africa. It is usually found at the edges of woods, where it rambles about supporting itself by the low bushes among which it grows; it is rather a striking object when in full flower, but the flowering season does not last long.

Fig. 1, calyx; 2, corolla opened showing insertion of stamens; 3, stamen; 4, pistil; 5, longitudinal section of ovary; *all enlarged*.



Rullia ovala, Harv.



Dalechampia capensis, Spreng. f.

PLATE 515.

DALECHAMPIA CAPENSIS, SPRENG, f. (Tent. Syst. Veg. 18.)

Natural Order, EUPHORBIACEÆ.

A twining plant bearing yellow-green flowers. Stem scandent several feet in length and much branched, stems and branches minutely piloso-pubescent, terete, green, striate. Leaves alternate, petiolate, stipulate, 3-5-foliolate, the uppermost lobe much the largest and free for nearly the whole of its length, entire, elliptic-ovate, acute, the two lateral lobes similar, but smaller, usually lobed in lower portion, but varying much in depth of cutting, sometimes the two lowest lobes quite absent; minutely pubescent on both surfaces; 4 inches long by $5\frac{1}{2}$ inches wide; petiole 2 to $3\frac{1}{2}$ inches long, thickened at base, piloso-pubescent; stipules 2, oblong, acute, reflexed, 2 to 4 lines long, 1 line broad. Inflorescence monoecious, on short axillary branchlets, the branchlet bearing a single leaf at its apex, and one or two peduncles, each bearing at their apices two opposite leafy veiny light green bracts, forming an involucre which is broadly ovate in general outline, finely serrate, and deeply 3-cleft at apex, the lobes triangular, acute, minutely pubescent. Male flowers, perianth, 4-6-parted, valvate in bud; stamens numerous, filaments connate in a column for the greater part of their length; anthers 2-celled, cells parallel, opening longitudinally; ovary 0. Female flowers, perianth, 8-12-parted, lobes linear, pinnatifid, enlarging in fruit, clothed with numerous irritant deciduous hairs. Ovary 3-celled, cells 1-ovuled; style elongate, obtuse at apex. Capsule deeply 3-lobed, 2-valved, lobes subglobose, seeds hard, globose.

Habitat: NATAL: Inanda 1800 feet, Wood 595, June; near Bellair, Wood 11066, January. Not uncommon at edges of woods in coast districts.

This genus contains about 60 species, most of which are American; in South Africa we have three species, but so far as known to us, the one here described is the only one hitherto found in Natal; a species has been called *D. natalensis*, but I have no further information about it. One species *D. Roezliana* is not uncommon in cultivation on account of its bracts being of a rosy colour, and of this there is a variety with white bracts. The genus is named in honour of James Dalechamp a French Physician who lived from 1513 to 1588. Our plant is frequently but very incorrectly called "Wild Hop;" the hairs on the calyx of the female flowers are irritant.

Fig. 1, Inflorescence, involucre removed; 2, male flower; 3, a stamen; 4, female flowers and bracts; 5, same, one bract removed; 6, female flower; 7, pistil; 8, cross section of ovary; 9, capsules with enlarged perianth lobes, one bract removed; 10, capsule; 11, lobe of enlarged perianth; fig. 9, natural size; remainder variously enlarged.

PLATE 516.

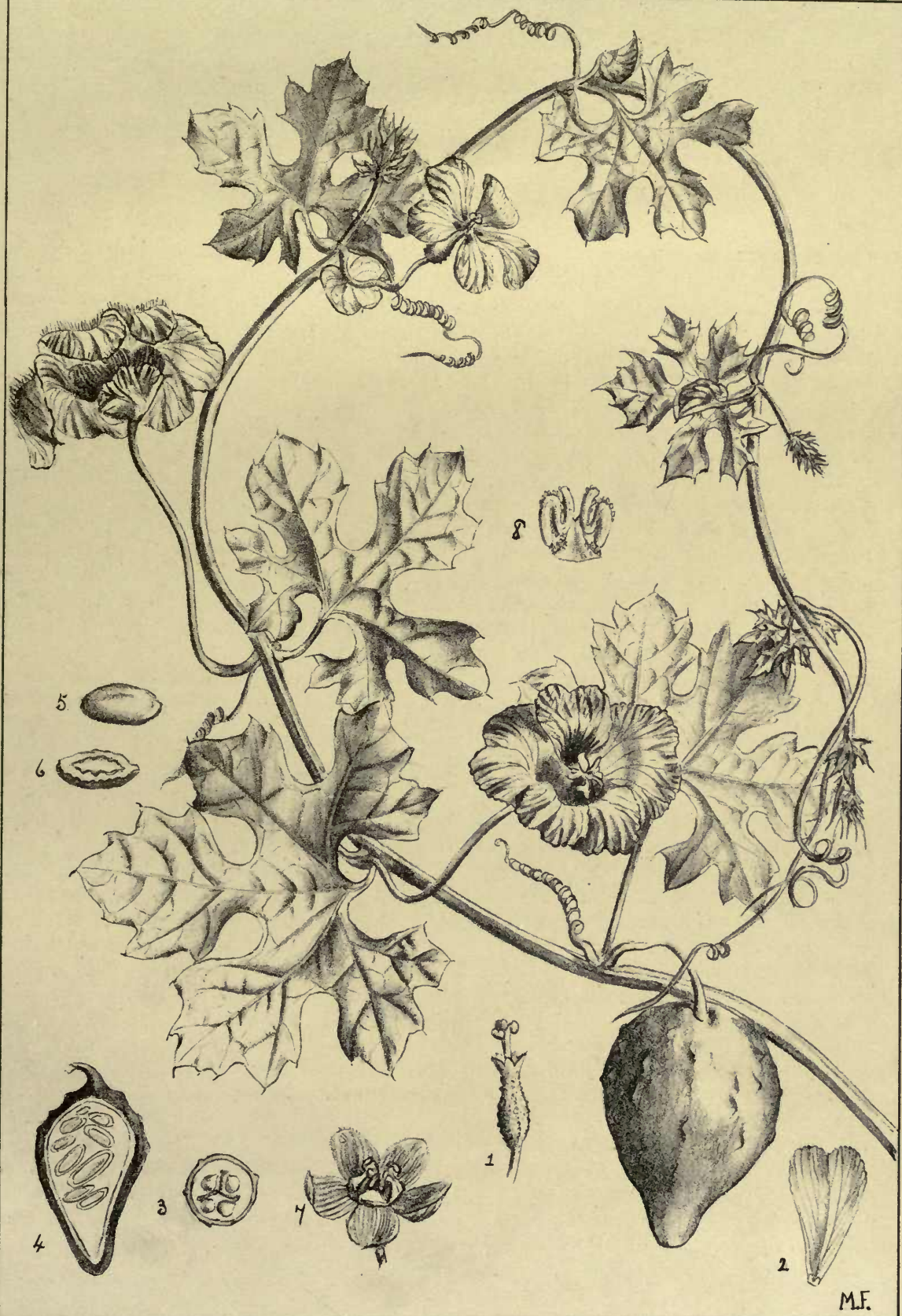
MOMORDICA INVOLUCRATA, E. MEY. (Fl. Cap. Vol. II, p. 491.)
Natural Order, CUCURBITACEÆ,

An herbaceous glabrous climber, bearing flowers which are cream coloured with dark centre, and bright scarlet fruit. Stems slender, much branched. Leaves alternate, petiolate, almost orbicular in general outline, palmately deeply 5-lobed, deeply cordate at base, the main sinuses deep and rounded, the lobes sinuate-dentate, the teeth mucronulate, the whole leaf 1 to 2½ inches long and broad, membranous, dark green and dull above, lighter and shining beneath, with prominent veins and veinlets, petiole 1 to 1¼ inch long, channelled above, convex beneath, tendrils capillary, simple, up to 6 inches long. Inflorescence monoecious, flowers solitary, axillary, pedunculate. Male flowers solitary in the upper axils, peduncles 1 to 4 inches long, slender; bract orbicular, white with green veins, ½ to 1 inch diameter, flower sessile in the bract, 1 to 2 inches diameter. Calyx 5-lobed, lobes orbicular, dark coloured, almost black at base, veiny; corolla 5-parted, two of the lobes pale yellow without markings, the other three dull dark green at base, the dark colour extending along the veins for a third of the length of the lobe. Stamens 3, free, filaments glandular at base, anthers cohering, one 1-celled, two 2-celled; flexuous, glandular on the back, the glands pear shaped and apiculate. Female flowers few, axillary, peduncles shorter than the male, bracteate a little above the base, green, smaller than in the male. Calyx tube (or ovary) flask-shaped, muricate, lobes small, triangular, acute; corolla smaller than in the male, pale yellow, veiny, lobes obovate, emarginate, midvein produced as a mucro, one or more of the lobes with a dark spot at base. Fruit 2 inches long, oblong but tapering to a blunt apex, scarlet, fleshy tubercular. Seeds covered with a scarlet arillus, the testa brown, 4 lines by 2½ lines, the margin grooved, the edges roughened, surface marked with a raised oblong ridge.

Habitat: NATAL only: *Drege*; *Krauss*; *Gueinzius*; near Verulam 250 feet, September, *Wood* 655; near Durban, February, *Wood* 11093.

The genus *Momordica* includes some 25 to 30 species mostly African; in Natal we have 5 species, one is probably introduced, and *M. involucrata* the most common; it is a very ornamental plant especially when in fruit. It was introduced into England by Mr. Thos. Cooper about 1867, and was successfully cultivated by the late W. Wilson Saunders, F.R.S., who described and figured it in his "Refugium." It was figured in the Botanical Magazine for 1886 from a plant which flowered in the "Water Lily House" at Kew, "forming a very attractive feature in the House." The generic name is from *mordeo*, to bite, "the seeds having the appearance of having been bitten;" this however, is not evident in the seeds of *M. involucrata*.

Fig. 1, female flower, petals removed; 2, petal; 3, cross section of ovary; 4, longitudinal section of immature fruit; 5, seed; 6, same, aril removed; 7, male flower, petals removed; 8, stamen; fig. 4, *natural size, remainder enlarged*.



Momordica involucreata, E. Meyer.



M.F.

Pentarrhinum insipidum, E. Mey.

PLATE 517.

PENTARRHINUM INSIPIDUM, E. MEY. (Fl. Cap. Vol. IV, Sec. I, Part V, p. 741.)
Natural Order, ASCLEPIADEÆ.

A perennial climbing plant bearing false umbels of white flowers. Stems minutely puberulous, terete, wide climbing. Leaves opposite, petiolate, cordate at base with broadly rounded lobes, acute or acuminate at apex, margins quite entire; the whole leaf quite glabrous; reaching to $3\frac{3}{4}$ inches long, 3 inches wide; petiole up to 2 inches long, minutely pubescent on upper side. Inflorescence lateral at the nodes, in umbel-like corymbs the main axil elongating into a very short raceme during growth; bracts $\frac{1}{2}$ to 1 line long, subulate, deciduous, pedicels 4 to 10 lines long, puberulous. Sepals 1 to $1\frac{3}{4}$ line long, lanceolate, acute, puberulous. Corolla green, lobes 2 to 3 lines long, 1 to $1\frac{1}{2}$ line broad, oblong, acute, glabrous, very strongly reflexed, minutely ciliate. Corona 5 lobed, the lobes alternating with the corolla lobes and arising from the base of the staminal column, about 1 line long, the lower portion channelled on its inner sides, convex outwardly, much widened at apex from whence projects a broadly subulate tooth which is curved inwardly over the top of the anthers, ivory white; anthers with a membranous appendage inflexed over the top of the style. Pollinia pendulous, oblong. Follicles solitary, 1 to 3 inches long to 1 inch wide, ovate-oblong, acute, tuberculate-echinate, glabrous (in our specimen.)

Habitat: NATAL: Near Durban, *McKen* 825; *Wood* 266, 19, 167; *Hilton* 3700 feet, *Dr. Brown* 230; *Tintern* 5000 feet, *Evans*; Also in Transkei, Griqualand East, and Tropical Africa.

Of this genus two species only are certainly known, the other being a native of Abyssinia, two others are enumerated as South African, but both are doubtful. This plant was figured and described by the late Professor Harvey in the *Thesaurus Capensis* and he says of it "the young pods which are tasteless are eaten by the Hottentots, they are shaped like cucumbers."

Fig. 1, calyx; 2, corona and staminal column; 3, corona lobe; 4, staminal column; 5, pollinia; 6, ovary and style apex; 7, follicle, *natural size, remainder enlarged.*

PLATE 518.

DOMBEYA BURGESSIE, GERR. (Fl. Cap. Vol. II, p. 590.)
Natural Order, STERCULIACEÆ.

A much branched shrub, 8 to 10 feet high, with large handsome leaves and bearing numerous white flowers with pink centre. Branches when young densely pilose with white hairs; leaves petiolate, stipulate, orbicular in general outline, cordate at base, shortly and bluntly 3 to 5 lobed, 7 veined, main veins prominent beneath, softly and densely pilose on both surfaces; 8 to 11 inches long and wide, petiole up to 10 inches long, swollen at base and apex, densely pilose like the leaves; stipules lanceolate, $3\frac{1}{4}$ lines long, soon deciduous. Inflorescence cymosocorymbose, axillary, many flowered, open flowers $1\frac{1}{4}$ inch diameter; peduncles equaling the petioles, pilose; pedicels $\frac{1}{4}$ to 1 inch long; involucre leaflets 3, ovato-lanceolate, 5 to 6 lines long, $1\frac{1}{2}$ line wide, unilateral, very soon deciduous. Calyx 5-parted, lobes lanceolate, 8 lines long, 2 lines wide, pilose. Corolla of 5 unequal-sided subovate, marcescent petals with broadly truncate apex, white with deep pink centre, the colour radiating in fine lines for varying distances from the base. Stamens 15 with 5 staminodes, all connate in a tube at base, the stamens unequal in length, the longest shorter than the staminodes, all antheriferous, the anthers oblong, erect, slitting; staminodes filiform, clavate, white. Ovary superior, globose, densely tomentose, 5-celled, ovules 2-3 in each cell, collateral; style slender, 5-cleft at apex, the arms revolute, stigmatose on inner surface. Capsule coriaceous, septicidal, $\frac{1}{4}$ inch diameter.

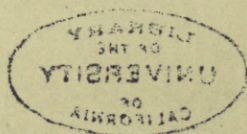
Habitat: NATAL: Klip River district, *Gerrard*; Zululand, *McKen*; in Botanic Gardens, Durban 150 feet, March, *Wood* 11094.

This species was found by the late M. J. McKen in Zululand, and planted by him in the Durban Botanic Gardens, where it or its descendant still is; at any rate the writer has known this particular plant for 26 years, and it must have been planted at least 12 years before the writer saw it; it is a very handsome shrub, and bears its flowers in profusion during the season. The writer has also seen the plant on the slopes of the Drakensberg, but was not fortunate enough to find it in flower. The specific name was given by Mr. Gerrard in honour of Miss Burgess of Birkenhead. Two other species of this genus have been figured in this work, *D. natalensis*, Sond, in Vol. I, pl. 90; *D. rotundifolia*, Planch, in Vol. III, pl. 228, two other species *D. Dregeana*, Sond and *D. cymosa*, Harv., are known in Natal, they are natives of the midland and upper districts. The shoots are used by the natives for making rough baskets, and the leaves for polishing the head rings of the old men.

Fig. 1, bud, showing involucre; 2, sepal; 3, petal; 4, portion of staminal tube; 5, staminode; 6, pistil; 7, cross section of ovary; *figs. 1 and 3 natural size, remainder enlarged.*



Dombeya Burgessiae, Gerrard.







Crocosmia aurea, *Planch.*

PLATE 519.

CROCOSMIA AUREA, PLANCH. (Fl. Cap. Vol. VI, p. 129.)
Natural Order, IRIDÆÆ.

Corm globose or subglobose, tunics thin, membranous, brown. Stems 2 to 4 feet long, ancipitous, or with 3-4 more or less elevated sharp ridges. Leaves 6 to 12, sheathing the stem to its base, distichous, linear, entire, 18 inches or more long to end of the sheathing base, 6 to 9 lines wide, stem-leaves 2-3, similar to the others, but shorter and narrower. Inflorescence a compound branching spike, the main axis almost straight, remainder flexuous, unilateral, with a flower at each angle. Bracts at base of each spike deltoid-acuminate, 2 to 4 lines long. Spathe-valves reddish brown, ovate or oblong, acute, $\frac{1}{4}$ to $\frac{1}{2}$ inch long. Perianth orange-red, tube $\frac{3}{4}$ to 1 inch long, limb spreading to 3 inches in diameter, segments oblong to oblong-lanceolate, spreading, at length strongly reflexed. Stamens 3, unilateral, inserted at base of perianth tube, reaching to tips of the segments, filaments filiform, anthers linear, sagittate, versatile, 4 lines long. Ovary inferior, 3-celled, ovules few in each cell, superposed; style filiform, 3-cleft, the branches 3 lines long, dilated at apex. Capsule sub-globose 3-lobed, dehiscing longitudinally; seeds few, large.

Habitat: NATAL: Umhloti 1800 feet alt., Wood 797, February; Gerrard 404; Plant 76; Cooper 3202; Buchanan; near Durban 150 feet alt., March, Wood 11086. Also in Tropical Africa.

The genus *Crocasmia* consists of this one species only; it is almost confined to South Africa, its only other known habitat being South East Tropical Africa; apparently it is not found in Cape Colony except in Griqualand East, but in Transvaal, Pondoland and Tembuland it has been gathered by various collectors; in the coast districts of Natal, and to at least 2000 feet above sea level it is not uncommon, and it is usually found at edges of thickets and similar places. It is in cultivation in Europe, having been introduced in 1846, and was formerly known as *Tritonia aurea*, Pappe.

Fig. 1, stamen; 2, pistil; 3, cross section of ovary; 4, capsule, natural size, remainder enlarged.

PLATE 520.

NERINE APPENDICULATA, BAKER. (Fl. Cap. Vol. VI, p. 213.)
Natural Order, AMARYLLIDÆ.

Bulb ovoid, tapering upwards, $1\frac{1}{2}$ inch diameter, tunics thin, scarcely membranous, containing many exceedingly fine fibres. Leaves 3-4, contemporary with the flowers, linear, green, glabrous, 1 to 2 feet long, deeply channelled down the face. Inflorescence a few flowered umbel; peduncle stout, terete, 2 feet to 2 feet 6 inches long, bearing 10 to 25 flowers; spathe-valves 2, up to 2 to $2\frac{1}{4}$ inches long by 7 lines wide in central portion, oblong but tapering to an obtuse apex, tinged with pink; pedicels 2 to 3 inches long, pubescent, the minute hairs transparent and cellular. Perianth reddish pink, 6-parted to base, segments linear-strap-shaped, keeled, the alternate ones minutely thickened at apex; 1 to $1\frac{1}{2}$ inch long, 2 lines wide, undulate in upper portion, strongly reflexed. Stamens 6, inserted at base of perianth tube, filaments filiform, thickened at base, declinate, unequal, three a little shorter; each having at base outside a membranous white appendage which is divided into 2-4 narrow acuminate erect teeth; anthers when unopened 3-lines long, oblong. Ovary 3-lobed, 3-celled, 3 lines diameter, few ovuled, ovules superposed; style slender, obscurely 3-lobed at apex. Capsule globose, deeply 3-lobed, membranous, loculicidally 3-valved. Seeds 1 or more in a cell, pear-shaped, glabrous.

Habitat: NATAL: Near Greytown 4500 feet, March, *Wood* 9834; same locality, *Wood*, May; Hilton Road, 3-4000 feet, March, *Wylie* in Herb., *Wood* 11091.

The genus *Nerine* is confined to South Africa and includes 15 species of which 3 are found in Natal; specimens of this species were first collected between Greytown and Weenen, and it is somewhat remarkable that on the same morning and within 500 to 1000 yards of each other the writer collected two species; on one side of the spur of a hill in a moist place *N. pancratioides*, Baker, with white flowers, and on the other side the species here figured; this was in May, 1890, both species at that time being undescribed.

The well known "Guernsey Lily" is *Nerine sarniensis*, *Herb*, and is a native of the Cape Colony; this and several others of the genus are in cultivation in Europe.

Fig. 1, three stamens showing appendages at base: 2, anther; 3, pistil; 4, cross section of ovary; 5, capsule, *natural size, remainder enlarged*.



Nerine appendiculata, Baker.



M.F

Schizostylis coccinea, Backh. & Harv.

PLATE 521.

SCHIZOSTYLIS COCCINEA, BACKH. AND HARV. (Fl. Cap. Vol. VI, p. 56.)
Natural Order, IRIDEE.

An erect herb bearing deep crimson flowers. Rootstock not bulbous, the root fibres tufted, rather fleshy. Leaves distichous, linear, glabrous, grass-like in texture, 1 to 1½ foot long, ¼ to ½ inch broad, the lower ones sheathing the stem, with a few stem leaves in upper portion similar but smaller. Stems slender, terete, 1 to 3 feet long. Inflorescence spicate, spikes 6 to 10 flowered, elongating; outer spathe-valves, oblong-lanceolate, long acuminate, reddish-green, 1¼ inch long, 3 to 4 lines wide a little from base, inner similar but smaller and more membranous, green. Perianth salver-shaped tube straight, erect, cylindrical, 1 to 1¼ inch long, limb 6-lobed, lobes oblong-ovate, acute, spreading, two thirds the length of the tube, 3 to 5 lines wide, deep crimson. Stamens 3, inserted at base of alternate perianth lobes, and two thirds their length, filaments filiform, anthers linear, basifixed, 3 to 4 lines long. Ovary inferior, clavate, indistinctly 3-lobed, glabrous, 3-celled, ovules many, crowded; style slender, divided nearly half way down into 3 filiform branches which are recurved at apex and stigmatose on inner surface. Capsule sessile, clavate, ½ inch long, seeds not seen.

Habitat: NATAL: Without precise locality, *Gerrard* 1528; *Sevenfontein* 3-4000 feet, *Wylie* in *Herb. Wood* 11090. Also in Cape Colony and Transvaal.

The genus *Schizostylis* is confined to South Africa, and includes two species only, the one here described and *S. pauciflora*, *Klatt*; both of these species are found in Natal, and always in moist places, edges of brooks and rivers, and often actually in the water; both are handsome flowering plants, *S. coccinea* perhaps, the handsomest of the two.

The generic name refers to the long style-branches, the specific name to the deep colour of the flowers. The plant was introduced into England in 1864, and is said to thrive well "in a warm sunny border," and also that it is well adapted for pot culture, and that the flowers retain their beauty for a considerable period, and are useful for cutting.

Fig. 1, perianth opened, showing stamens; 2, a stamen; 3, pistil; 4, cross section of ovary; 5, capsule, *natural size, remainder enlarged*.

PLATE 522.

ALBERTA MAGNA, E. M. (Fl. Cap. Vol. III, p. 16.)
Natural Order, RUBIACEÆ.

A tree up to 20 feet or more in height, bearing handsome scarlet flowers and seed-vessels; twigs grey or dark-coloured, deeply scarred by marks of fallen leaves. Leaves aggregated at ends of the twigs, opposite or ternate, petiolate, stipulate, oblong to elliptical-oblong, entire, coriaceous, glabrous, margins recurved, 4 to 5 inches long, $1\frac{1}{2}$ to 2 inches broad, narrowed gradually to the very short petiole; stipules cup-like, rounded and with a minute tooth at each side. Inflorescence paniculate with cymose branches, pedicels 3 to 4 lines long, bracteate at base, bracts minute. Calyx tube 10-ribbed, turbinate, limb 5-occasionally 6-lobed, two or three of the lobes becoming much larger, and crimson in fruit, 12 to 14 lines by 3-4 lines, veiny. Corolla gamopetalous, tube cylindrical, gradually widening to throat, incurved, puberulous, 8 to 10 lines long, 3 lines wide at throat; limb 5-fid, lobes deltoid, acute, to $1\frac{1}{2}$ line long. Stamens 5, included, sessile on corolla tube a little below the throat; anthers, linear, apiculate, 2-celled. Ovary 2-celled, cells 1-ovuled. Fruit dry, oblong, 10-ribbed, crowned with 2-3-4-of the enlarged, oblong, veiny, leaflike calyx lobes, the whole bright crimson.

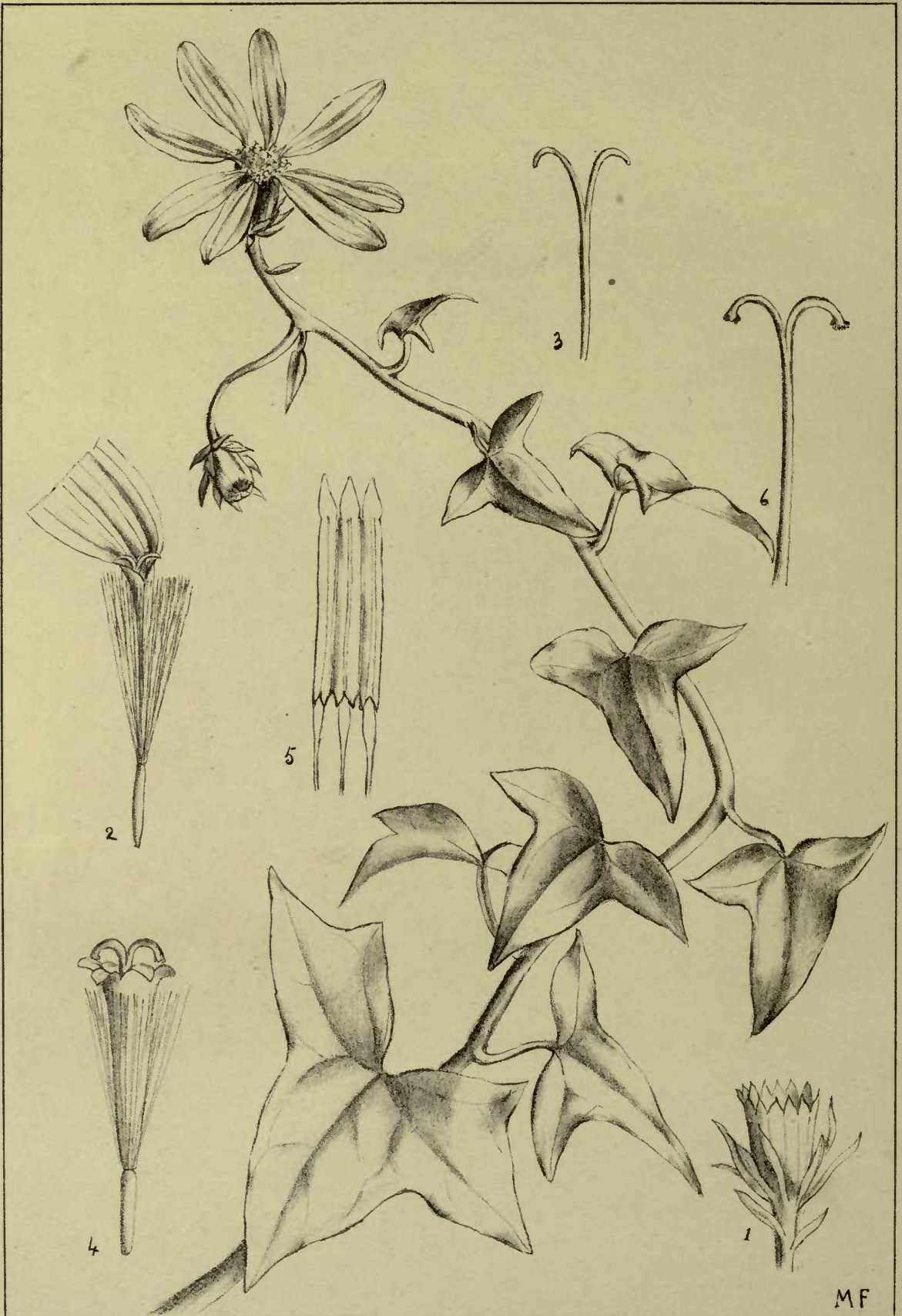
Habitat: NATAL: 1000 to 2000 feet, *Drege*; without precise locality, January and February, *Gerrard & McKen* 1358; Inanda 2000 feet, *Wood* (in Government Herbarium 756); near Maritzburg. *Mitchell* (in Government Herbarium 6417); Zwaartkop 3-4000 feet, March, *Wylie* in Herbarium (*Wood* 11089.)

The genus *Alberta* includes two species only, one in Madagascar, the other in Natal; it is named in honour of Albertus Magnus who lived in the 13th Century and wrote a work entitled "De Vegetabilibus et Plantis." *A. magna* so far as known to us has been found in Natal only, though probably it occurs in Pondoland. It is found only at from 1800 to 3000 feet above sea level, and when in flower or fruit is a striking object, which is conspicuous from a considerable distance. It has been grown in England from seeds sent by the writer, and has flowered at Kew and other places also, and is well worth cultivation.

Fig. 1, calyx, ovary and style; 2, corolla opened; 3, a stamen, front view; 4, same, back view; 5, cross section of ovary; 6, portion of inflorescence with fruit, natural size, remainder enlarged.



Alberta magna, E. Mey.



Senecio macroglossus, D.C

PLATE 523.

SENECIO MACROGLOSSUS, D.C. (Fl. Cap. Vol. III, p. 403.)
Natural Order, COMPOSITÆ.

A glabrous climbing plant bearing light yellow flowers. Stems terete, herbaceous. Leaves alternate, petiolate, exstipulate, hastate, cordate at base, acuminate, basal lobes 2, large and acuminate like the central one, often with two much smaller ones proceeding from their lower margins, otherwise entire, 3-veined, texture fleshy but drying to thin and papery; 3 inches long and wide; petiole 1 to $1\frac{1}{2}$ inch long, terete. Flowering branches mostly 1-headed, from $1\frac{1}{2}$ to 6 inches long, bearing a few depauperated leaves in lower portion which become linear and much smaller in upper portion, the uppermost about 4 lines long by 1 line wide. Heads radiate, spreading to 2 inches or a little more in diameter; rays 8 to 12, narrow-oblong, minutely 3-toothed at apex, multistriate; disk florets 40 to 50, perfect, their styles 2-branched, the branches strongly recurved, truncate and papillose at apex; ray florets female, their styles similar, but epappillose. Achenes slender, glabrous.

Habitat: NATAL: *Drege*; *Gerrard & McKen* 330; near Durban 100 feet alt., May, *Wood* 10592.

A rather pretty climber found in the coast districts, but not very common; it is sometimes seen in cultivation, and popularly known as "Natal Ivy." It is in cultivation in Europe where it was introduced in 1875; there it is known as "Cape Ivy," and is said to be well suited for training to rafters of Greenhouses.

Fig. 1, involucre and calyculus; 2, ray floret, upper portion removed; 3, style of ray floret; 4, disk floret; 5, three stamens; 6, style of disk floret, *all enlarged*.

PLATE 524.

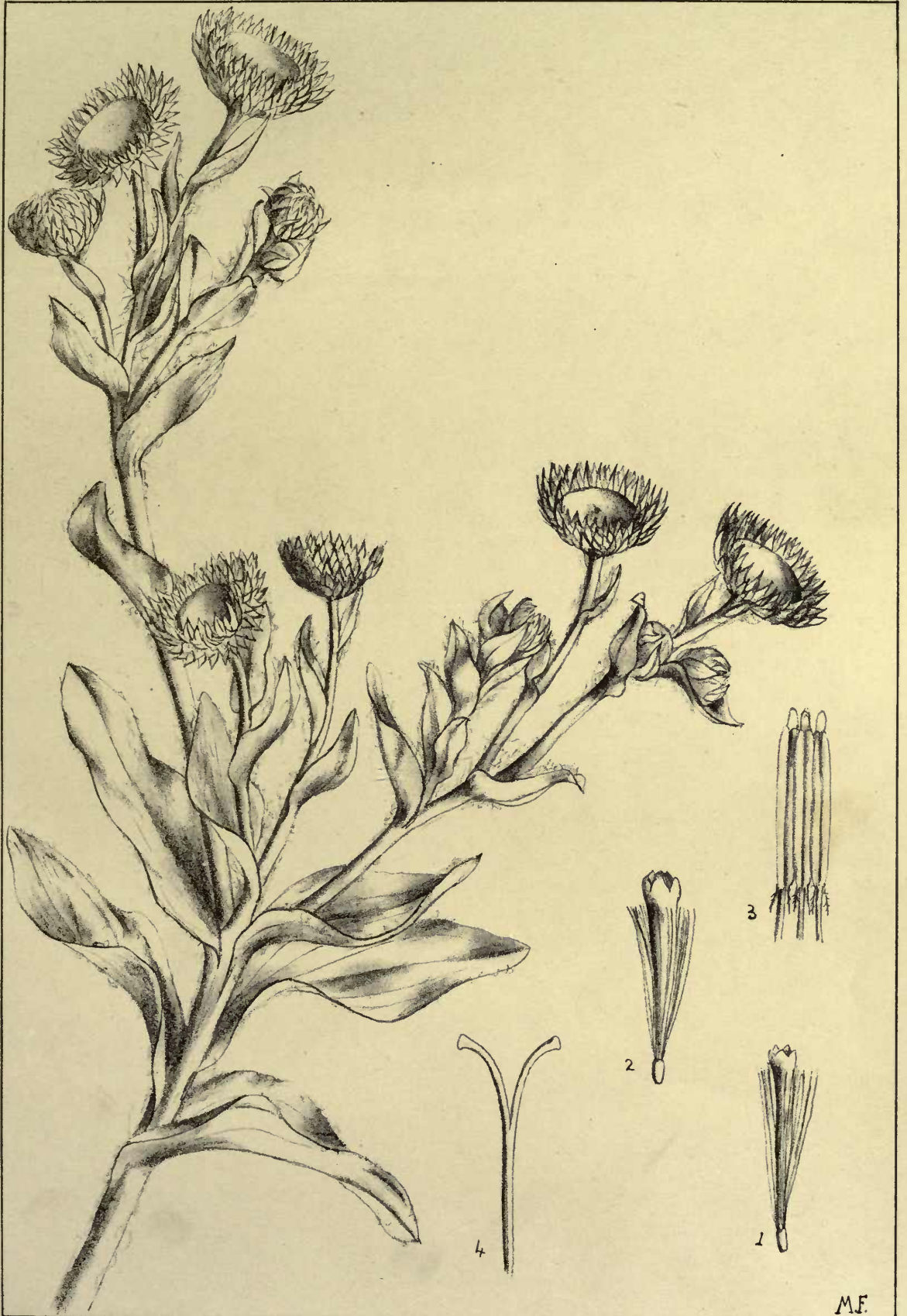
HELICHRYSUM COOPERI, HARV. (Fl. Cap. Vol. III, p. 231.)
Natural Order, COMPOSITÆ.

An erect undershrub 4 to 5 feet high, bearing numerous yellow flowers. Stems leafy to summit, densely clothed with white cobweb-like hairs; branched near apex. Leaves alternate, sessile, exstipulate, lower ones decurrent on the stem for 1-2 inches, uppermost ones stem-clasping, but not decurrent, gradually decreasing in size from the base upwards, 3 to 4 inches long, 1 to 1½ inch wide, oblong, entire, tapering to both ends, cob-webby and glandular beneath, pubescent above, margins woolly-ciliate, veins and veinlets prominent beneath. Heads solitary, terminal on the branches, very many flowered, discoid; involucre in many series, the scales oblong-acute, inner ones erect or suberect, lower ones spreading, all bright yellow. Receptacle flat, pitted. Florets of disk perfect, marginal ones few, female, filiform, pappus of few white bristles. Achenes cylindrical, obtuse at both ends, dark coloured.

Habitat: NATAL: Inanda 1800 feet alt., May, *Wood* 560; near Durban 150 feet alt., April, *Wood* 11088. Also in Orange River Colony, *Cooper* 1117.

The large genus *Helichrysum* contains from 250 to 300 species, of which 137 are described in the *Flora Capensis* as South African; since the publication of that work in 1865 many more species have been described in different publications. In Natal according to *Wood's Revised List* there are 78, and in the Supplement to that List 13 more are enumerated, making 91 in all as natives of Natal, and it is almost certain that there are others which have not come to our knowledge. Two species have already been figured in this work, *H. Kraussii*, *Sch Bip.* in Vol. III, pl. 269, and *H. teretifolium*, *Less* in Vol. IV, pl. 327, the species here figured being very different in appearance from either. *H. Cooperi* is very common in coast districts in the late summer, and according to the *Flora Capensis* it is "a very fine species worthy of cultivation."

Fig. 1, female floret; 2, perfect floret; 3, three stamens; 4, style, all enlarged.



Helichrysum Cooperi, Harv.



Ipomoea ficifolia, Lindl.

PLATE 525.

IMPOMOEA FICIFOLIA, LINDL. (Fl. Cap. Vol. IV, Sec. 2, p. 64.)

Natural Order, CONVULVULACEÆ.

A climber bearing large mauve-pink flowers. Roots a little thickened, not tuberous. Stems terete, slender, wide climbing, pilose with whitish hairs; much branched. Leaves alternate, petiolate, exstipulate, 3-lobed, terminal lobe longest, acute or acuminate, mucronulate, lateral ones rounded to the cordate base, with a minute mucro at the most prominent part of the upper margin; margins more or less undulate or crenate; up to 4 inches long by $3\frac{1}{2}$ inches wide; upper surface with numerous short scattered and strongly deflexed hairs, under surface of mature leaves glabrous; veins and veinlets prominent beneath; petiole 3 to $3\frac{1}{2}$ inches long with a few very minute hairs. Peduncles 3 to 5-flowered, pedicels very short; bracts linear-lanceolate, densely hirsute, the basal portion much widened with the rounded edges incurved. Sepals lanceolate, acuminate, hirsute, $\frac{1}{2}$ inch long. Corolla funnel-shaped, spreading to 2 inches or $2\frac{1}{2}$ inches wide and long, pink, becoming deep red-purple at base of tube, glabrous. Stamens 5, on corolla tube, included, anthers linear-sagittate, dorsifixed, 2-celled. Ovary superior, 2-3-celled, cells 2-seeded; style equalling the stamens, stigma bilobed. Capsule globose, glabrous, 4-seeded, seeds rounded on outer side, angled by pressure on inner side, and with a few cobwebby hairs on margins.

Habitat: NATAL: Umlazi River Heights, *Drege*; near Durban, Botanic Gardens Distribution 494 (*Wood* 3091); Nonoti, *Gerrard* 1328; Inanda 1800 feet alt., *Wood* 87; near Durban 150 feet alt., April, *Wood* 11092.

This plant has until lately been known as *Ipomoea holosericea*, *E.M.*, but that name according to the *Flora Capensis* is now a synonym. It is a very common plant on the coast and exists at an altitude of at least 2000 feet above sea level; the handsome flowers are borne in great abundance, and in the season the edges of woods and similar places are bright with their colour, as the stems and branches hang in festoons from the trees and shrubs. It is stated in the *Flora Capensis* that the roots are tuberous, but we do not find that to be the case, and the plant is an annual. *I. ficifolia* is also a native of Brazil, and is cultivated in Europe.

Fig 1, calyx; 2, lower portion of corolla opened, showing stamens; 3, base of filament; 4, disk; 5, pistil; 6, cross section of ovary; 7, capsule; 8, stipule; 9, bract; Fig. 7, natural size, remainder enlarged.



Lapeyrousea grandiflora. Baker.

PLATE 526.

LAPEYROUSIA GRANDIFLORA, Baker. (Fl. Cap. Vol. VI, p. 96).
Natural Order IRIDACEÆ.

Corm globose $\frac{1}{2}$ inch diameter, tunics brown, fibrinous. Flowering stem 18 inches to 2 feet long, terete, glabrous. Leaves, basal, 4-8, distichous, stem-clasping in lower portion, linear, erect, 12 to 15 inches long, $\frac{1}{4}$ to $\frac{1}{2}$ inch broad; stem leaves 1-3 similar, but much smaller. Inflorescence a compound spike, its lower branches 1-3, few-flowered. Spathe valves, outer lanceolate, green, $\frac{1}{2}$ inch long; inner similar, $4\frac{1}{2}$ lines long. Perianth tube subcylindrical, up to $1\frac{1}{2}$ inch long, widening at throat, limb 6-lobed, segments oblong, narrowed to base, reaching to $1\frac{1}{4}$ inch long, bright scarlet, the three lower with deep scarlet blotch at base. Stamens 3, exserted, unilateral, anthers 2-celled, sagittate. Ovary inferior, 3-celled, ovules superposed. Styles filiform, 3-branched, branches bifid. Capsule not seen.

Habitat: ZULULAND: Umlalazi, 1-200 feet alt., March, Wood 10376. Also near Delagoa Bay, (Mrs. Monteiro): Highlands of the Zambesi country by several collectors.

The genus *Lapeyrousia* includes about 40 species, of which 24 are found in South Africa, the remainder in Tropical Africa. One species *L. cruenta* has been already figured in this work Vol. I, plate 54, but the species here described has much larger flowers, and is well worth cultivation. The genus is named after J. F. G. de la Peyrouse the French circumnavigator.

Fig. 1, perianth open, showing stamens; 2, a stamen; 3, style; 4, cross section of ovary; 5, corm, *natural size, remainder enlarged*.

PLATE 527.

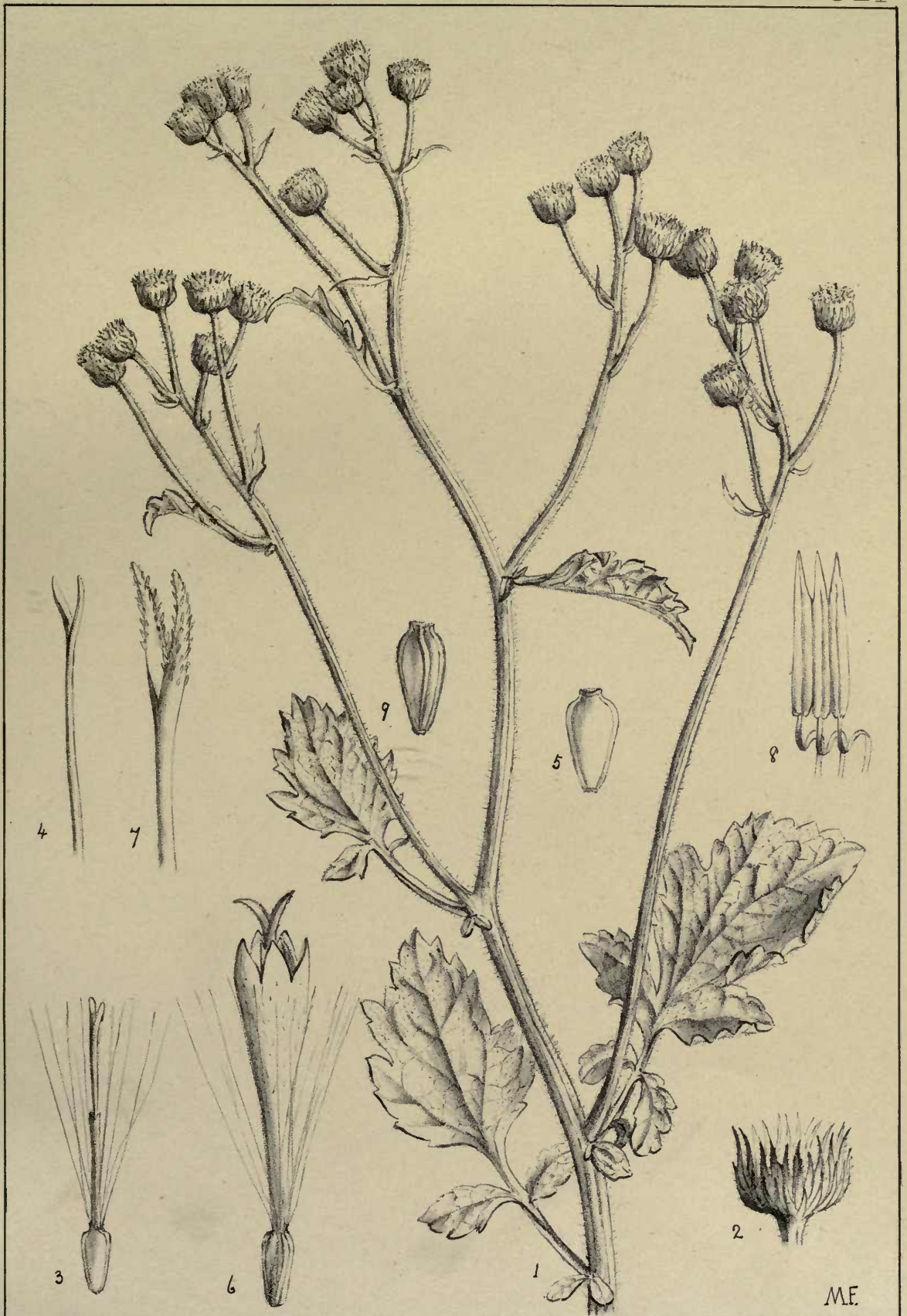
CONYZA INCISA, Ait. (Fl. Cap. Vol. III, p. 113).
Natural Order COMPOSITÆ.

A low growing much branched plant with yellow flower-heads. Stems herbaceous, terete, multistriate, pilose with white cellular hairs, and glandular with minute stalked glands, more or less viscid, much branched in upper portion. Leaves petiolate, lower ones largest, the petiole concave above, usually eared at base, the two ears appearing like stipules; a short distance above them are two depauperated sessile leaflets, 2 to 3-lines long, 1 to 2-lines broad, and frequently above them, and just below the lamina are a pair of larger ones reaching to $\frac{3}{4}$ inch long, 4 to 6 lines broad, deeply incised on the margins; the terminal lobe (or true leaf) being 1 to 2 inches long, $\frac{1}{2}$ to $1\frac{1}{2}$ inch broad, deeply and very irregularly inciso-dentate, the whole simulating a compound leaf, upper leaves similar, but smaller. Heads heterogamous, very loosely corymbose, on long and often naked, erect branches; discoid. Involucral scales many, in several rows, linear to linear-lanceolate, pilose and glandular, dark tipped; receptacle honeycombed, margins of cells toothed, more deeply so in those of central florets; marginal florets female, in many rows, their corollas filiform, minutely 2-3-toothed at apex; central florets fewer, perfect, their corollas tubular, swollen above, and 5-toothed at apex; filaments more or less curved, slender; anthers obtuse at base. Style of the female florets very slender, 2-toothed, of perfect florets larger, 2-lobed, the lobes minutely hispid. Pappus uniseriate of many slender rough bristles. Achenes of marginal florets minutely thickened at margin, compressed, those of central florets 5-ribbed, all glabrous.

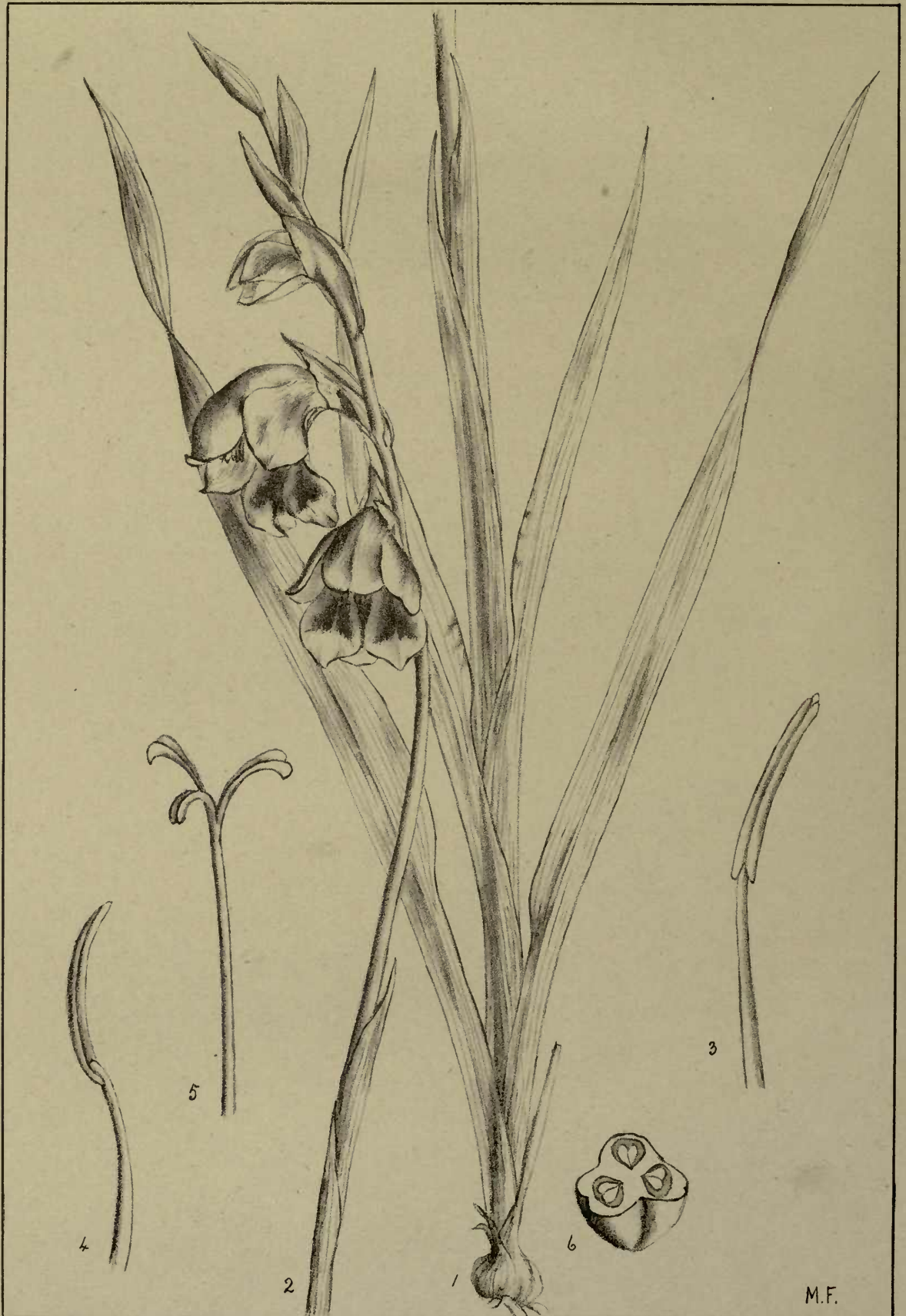
Habitat: NATAL: Coast districts and up to at least 2000 feet alt., Inanda 1800 feet alt. *Wood* 1110; without precise locality *Gerrard & McKen* 338; 339. Also in Cape Colony, and probably in the other Colonies also.

The genus *Conyza* includes about 50 species, mostly in tropical and sub-tropical countries, very few in temperate regions. In South Africa there are 14 species as enumerated in the *Index Kewensis*, of which at least 6 are found in Natal. None of the Natal species are of any importance, nor are they used in any way so far as known to us, except that *C. ivæfolia*, (*Less*) has been used in Cape Colony by the natives, mixed with other ingredients as a remedy for gall sickness in cattle.

Fig. 1, Flowering branch, upper portion; 2, involucre; 3, female floret; 4, style of same; 5, achene; 6, perfect floret; 7, style of same; 8, three of the stamens; 9, achene of perfect floret; *except fig 1, all enlarged.*



Conyza incisa, Ait.



Gladiolus Papilio, Hook. f.

PLATE 528.

GLADIOLUS PAPILIO, Hook, f. (Fl. Cap. Vol. VI, p. 152).
Natural Order IRIDÆÆ.

Corm globose, $\frac{3}{4}$ inch diameter, tunics of fine matted fibres. Leaves, sub-basal, 4-6, ensiform, equitant, distichous, with a distinct raised midvein, and 3-4 secondary ones on each side, firm in texture, quite erect, tapering to a fine point, the outer ones 6-12 inches long, $\frac{1}{2}$ - $\frac{3}{4}$ inch broad, quite glabrous. Stem 1 to 3 feet long including the inflorescence. Flowers 4 to 7 in a very lax spike, dull purple outside, inner surface dull white, the three lower lobes with a dark purple central band which varies both in length and breadth, and is tipped more or less with yellow. Valves oblong-acuminate or cuspidate, the outer $\frac{3}{4}$ -1 $\frac{1}{4}$ inch long. Perianth tube strongly curved, $\frac{1}{4}$ inch long, narrow below, funnel shaped in upper portion; limb 6-parted, $\frac{3}{4}$ to 1 $\frac{1}{4}$ inch long, the segments obovate-spathulate, the three upper ones $\frac{1}{2}$ to $\frac{3}{4}$ inch broad in centre, the three lower ones much narrower. Stamens 3, unilateral, arching, contiguous, inserted below the throat of the perianth tube; anthers linear-acute, not reaching to tips of perianth lobes, basifixed, sagittate. Ovary pubescent, 3-celled, ovules many, superposed; style filiform, curved, 3-lobed at apex, the lobes short, obtuse. Capsule not seen.

Habitat: NATAL: Coast and midlands in open ground. Near Durban, *Sanderson* 367; Inanda 1800 feet alt., *Wood* 442; Clairmont 10-30 feet alt., *Wood* 1729; Swamps near Mooi River, 4500 feet alt., *Wood* 3441; without precise locality *Gerrard* 647. Also in Transvaal and Orange River Colony.

The plant here figured and described is the variety found in the coast and midland districts and agrees with Sanderson's 367 and Wood's 442 and 1729, and is the variety enumerated in "Nicholson's Dictionary of Gardening" as *G. Papilio atratus*, which was introduced into cultivation in Europe in 1885; while Wood's 3441 is the type, and is found in the upper districts, it is usually larger in all parts, and the flowers brighter in colour, with the markings more distinct. This plant is in cultivation in Europe, having been introduced in 1866, and it was figured in the "Botanical Magazine," plate 5565.

Fig. 1, corm, leaves and base of the stem; 2, apex of stem with flowers; 3, stamen; 4, same, side view; 5, style and stigmas; 6, cross section of ovary. *Fig. 1 and 2 natural size, remainder enlarged.*

PLATE 529.

HOMALIUM RUFESCENS, Bth. (Fl. Cap. Vol. I, p. 72, sub *Blackwellia*).
Natural Order SAMYDACEÆ.

A much branched shrub bearing axillary panicles of small white flowers. Branches and branchlets dark coloured, lenticillate. Leaves alternate, petiolate, exstipulate, oblong to narrowly oblong or oblong-lanceolate, $1\frac{1}{2}$ to 2 inch long, $\frac{3}{4}$ inch wide, quite obtuse or tapering to a blunt apex, margins entire or very irregularly crenato-serrate, gradually narrowed to base, quite glabrous, dark green and shining above, duller beneath; petiole 2 to 3 lines long, channelled above, usually purplish in colour. Inflorescence of numerous axillary and terminal panicles, $1\frac{1}{2}$ to 2 inches long, peduncles and pedicels slender, minutely hispid. Calyx 7-8-parted, the lobes linear, pubescent on their surfaces and ciliate with whitish hairs, $\frac{3}{4}$ to 1-line long, with an opposite gland at the base of each; petals equalling the sepals, and with similar pubescence, inserted at throat of calyx. Stamens equalling the petals in number, a little longer and inserted with them; filaments filiform; anthers 2-celled, subglobose, parallel, splitting longitudinally. Ovary half superior, 1-celled, with 3 parietal placentas; styles 4, slender, subulate, spreading; ovules few, pendulous. Capsule not seen.

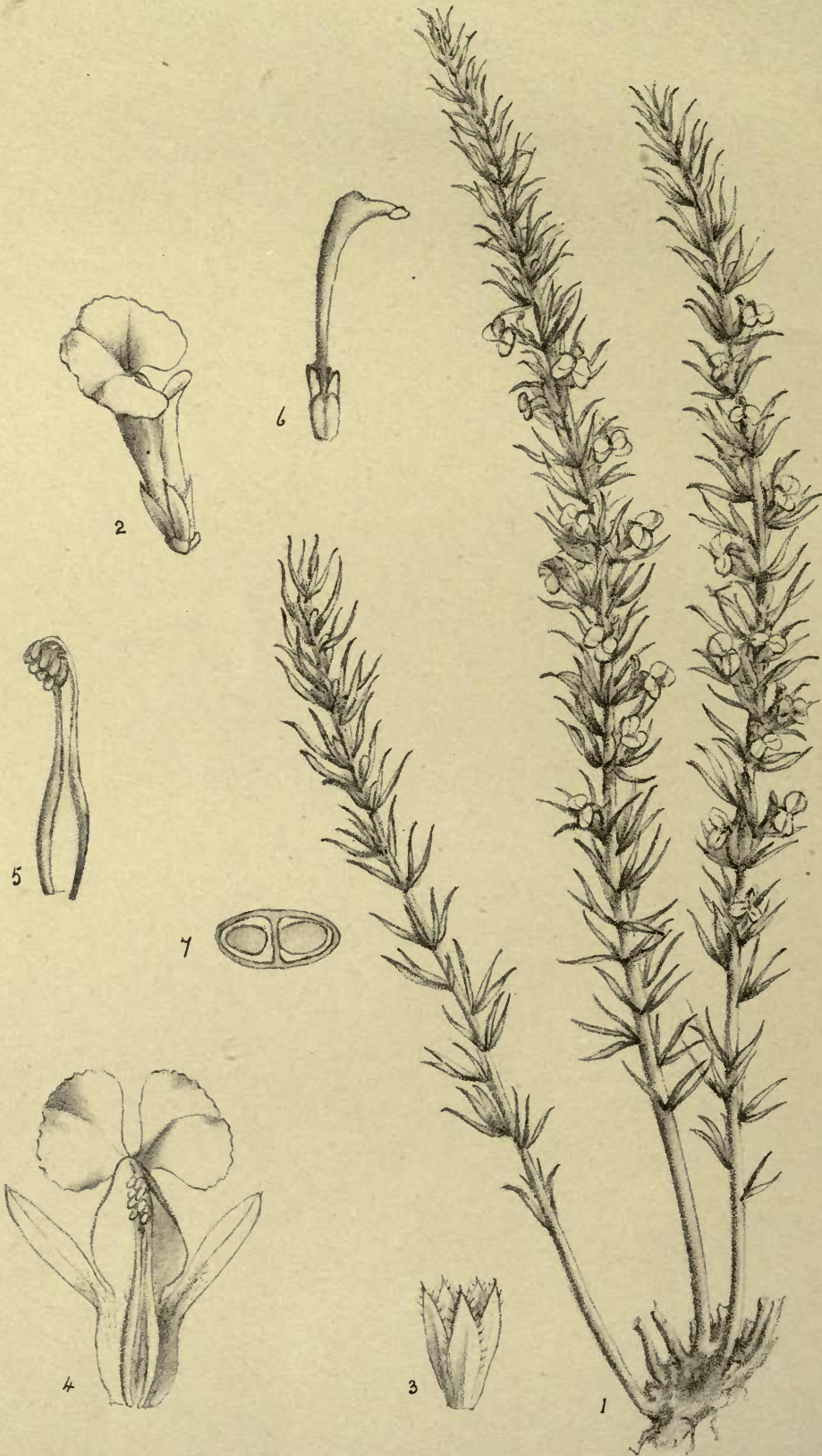
Habitat: NATAL: Umzinyati Falls, 300 to 500 feet alt., February, *Wood* 1333; same locality, October, *Wood* 11463.

In the *Flora Capensis* Vol. I, p. 72, this shrub is described as *Blackwellia rufescens*, and included in the Order Bixaceæ, but it has since been removed to Samydaceæ, and is now known as above; it is not a common plant in Natal as the records given above are the only ones known to us. Drege and Gueinzus also collected it in Natal, but the precise locality is not given; the natives do not seem to have any specific name for it, and do not put it to any use, so far as we are aware. It was first seen by the writer in February, 1881, and was not again met with until October, 1909. In Sim's splendid work "*Forest Flora of Cape Colony*" it is figured and described and is said to be "a coastward tree from the Fish River eastward, and also found in Natal; it has dense, hard timber, but is seldom large enough to have economic value; its shining leaves, and abundant white flowers make it an ornamental garden tree."

Fig. 1, branch with leaves and inflorescence; 2, flower; 3, stamen; 4, pistil; 5, cross section of ovary; *except fig 1, all enlarged.*



Homalium rufescens. Bth.



MF

Murallia lancifolia, Harv.

PLATE 530.

MURALTIA LANCIFOLIA, Harv. (Fl. Cap. Vol. I, p. 108).
Natural Order POLYGALEÆ.

Root woody; Stems numerous, slender, leafy to base, pubescent especially in upper portion, terete, 8 to 14 inches long. Leaves fascicled, linear to lanceolate, acuminate, mucronate, the mucro brownish and semitransparent; very minutely gland-dotted, glabrous, margins minutely and distantly scabrous; 3-6- lines long, $\frac{1}{2}$ - $\frac{3}{4}$ -line wide. Flowers pink, axillary, usually solitary, subsessile; Sepals 5, linear-lanceolate, acuminate, ciliate, 1-line long. Petals 3, unequal, broadly linear, the lowest largest and hood-shaped; united at base; the whole corolla $3\frac{1}{2}$ lines long. Stamens 8, united in a split tube, and attached to base of corolla, anthers oblong, 1-celled, dehiscing by an apical pore. Ovary superior, 4-horned, 2-celled, cells 1-ovuled. Style 1, thickened upwards. Capsule not seen.

Habitat: NATAL: On the Tafelberg, *Krauss*; *Sanderson*; Krantzkloof 1800 feet alt., *Wood*, 1107, October; Zwartkop 3-4000 feet alt., February, *Wylie* (*Wood* 10,271); without precise locality *Gerrard & McKen* 1494 (Government Herbarium 14).

The genus *Muraltia* includes about 70 species natives of South Africa, of which according to the "Revised List of the Flora of Natal" 5 only are known from Natal. *M. lancifolia* is not uncommon in the midlands and upper districts of the colony, and is always found in open ground; the root is thick and woody, sending up numerous stems which reach from 8 to 16 inches in height and bear flowers for about two thirds of their length. A variety with white flowers, *Wood* 11480 from near Gillitt's, was gathered in October.

Fig. 1, plant *natural size*; 2, flower; 3, calyx; 4, corolla opened; 5, stamens; 6, pistil; 7, cross section of ovary; *all enlarged*.

PLATE 531.

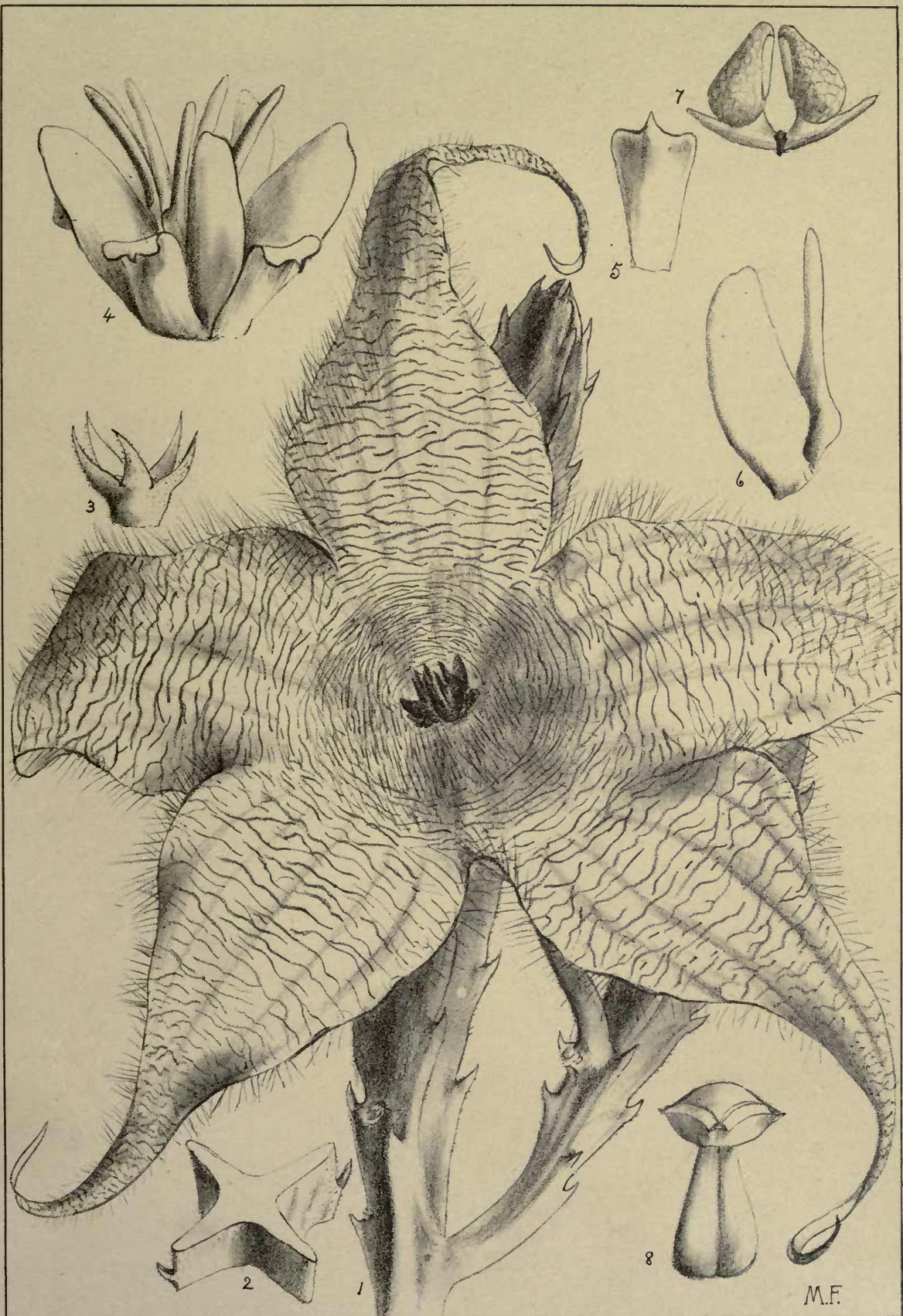
STAPELIA GIGANTEA, N.E.B. (Fl. Cap. Vol. IV, Section I, p. 948.)
Natural Order ASCLEPIADEE.

Stems erect, branching and shortly decumbent at the base, 4-8-inches long, $\frac{3}{4}$ -1 $\frac{1}{4}$ inch square, pubescent, light dull green; angles much compressed, with erect rudimentary leaves 1-1 $\frac{1}{2}$ line long on the small teeth. Flowers 1-2-together, near the base or towards the middle of the stem; pedicels about 2 inches long, 2 $\frac{1}{2}$ lines (in fruit about $\frac{1}{2}$ inch) thick, softly pubescent. Sepals 4-5-lines long, lanceolate, acuminate, pubescent. Corolla very large, in bud pentagonally ovoid, acuminate, when expanded 11 to 16 inches diameter, with the united part disk-like, shallowly depressed in the centre; back pubescent; inner surface transversely rugulose and thinly covered all over with long, fine, erect, pale purplish hairs, and ciliate with similar but longer hairs, light ochreous-yellow, everywhere marked with transverse crimson lines; lobes 4-6 $\frac{1}{4}$ inches long, 2-2 $\frac{3}{4}$ inches broad, ovate-lanceolate, acuminate, very spreading or recurved, slightly convex, scarcely revolute at the margins; outer corona-lobes ascending-spreading, slightly recurved at the apex, 2 $\frac{1}{2}$ -3-lines long, 1 $\frac{1}{4}$ -line broad, oblong, slightly concave down the face, 3-toothed at the apex, with the middle tooth subulate, acute and longer than the obtuse side teeth, glabrous, dark purple-brown; inner corona-lobes dark purple-brown, with the dorsal wing free to the base, ascending, 2-3-inches long, 1-1 $\frac{1}{2}$ -line broad, oblong or subdeltoid-oblong, obtuse or acute, entire; inner horn 2-3-lines long, erect, subulate, rather obtuse, nearly straight. Follicles slightly diverging; 5-6 $\frac{1}{2}$ -inches long $\frac{2}{3}$ inch thick, subterete, tapering to an obtuse slightly hooked apex, pubescent.

Habitat: NATAL: Zululand, Umvelose River, *Gerrard*, 717; 778; Rocky Hill Indulindi, Zululand, 1-2000 ft. alt., April, *Wood*. Drawn from cultivated plants in Botanic Garden.

The above description is by Mr. N. E. Brown of Kew, and is copied verbatim from the *Flora Capensis*, after comparison with our specimens. *S. gigantea* has been figured in the *Botanical Magazine*, Vol. XLV t 7068, and Sir J. D. Hooker says: "This, some *Rafflesias*, and certain species of *Aristolochia* are the largest flowered members of the vegetable kingdom, and, what is curious, all are most fetid and have lurid colours. They agree in no other character; they differ altogether in habit, and botanical affinity; and they inhabit widely distant parts of the world, namely South Africa, Malaya and Brazil," The native name of the plant is u-Zililo, and the stems are used by them in hysteria.

Fig. 1, stem and flower; 2, cross section of stem; 3, calyx; 4, corona; 5, outer corona-lobe; 6, inner corona-lobe; 7, pollen-masses; 8, pistil; *figs. 1, 2, 3 natural size, remainder enlarged.*



Slapelia gigantea, N.E. Brown.





Crotalaria striata, DC.

PLATE 532.

CROTALARIA STRIATA, D.C. (Fl. Cap. Vol. 2, p. 44.)
Natural Order LEGUMINOSÆ.

An erect branching shrub, bearing long terminal racemes of yellow flowers. Stems and branches terete or striate-sulcate in upper portion, very thinly and minutely white-silky in younger portions. Leaves alternate, exstipulate, trifoliolate; petiole 2-3-inches long, swollen at base, very minutely silky; leaflets elliptic or oblong, quite entire, minutely mucronulate, green and glabrous above, pale and silky puberulent beneath, reaching to 4 inches in length and $2\frac{1}{4}$ inches in breadth, their stalks 2-3-lines long, swollen. Inflorescence racemose, the racemes terminal on stems and branches, 6 to 9 inches long, bearing flowers on the upper two-thirds of their length, 50-80-flowered, many of the upper flowers not reaching maturity or bearing legumes. Calyx gamosepalous, tube sub-cylindrical, much compressed, limb 5-fid, upper lip 2-fid, lower 3-fid, teeth acuminate a little longer than the tube, the whole calyx silky puberulous, 4 lines long. Corolla papilionaceous; vexillum erect, 5-lines long, 4-lines wide; carina strongly curved, as long as vexillum; alæ oblong a little shorter than vexillum. Stamens 10, monadelphous, unequal, 5 long, 5 short, completely enclosed in the carina, the anther of the long ones linear $1\frac{1}{2}$ line long, of the short ones, subglobose, $\frac{1}{2}$ line long. Ovary pubescent; style strongly curved, stigma obtuse. Legume inflated, pendulous, a little compressed, channelled on the upper suture, $1\frac{1}{2}$ -2-inches long, 30-40-seeded.

Habitat: NATAL: *Hewitson*: *Sanderson*; Umzinyati Falls, March, *Wood* 913; near Greyville, March, *Wood* 11671.

This plant is not very common in Natal, but it occurs throughout the tropics of both hemispheres, and it has of late years been extensively used in other countries for "green soiling," that is enriching partially exhausted soils by the bacterial nodules produced on the roots, and for ploughing into the ground at or near to maturity; for these purposes it is thought to be one of the most suitable plants known. The species was first collected by the writer in March, 1880, and not again seen until March, 1910. In the Flora of British India the flowers are said to be "yellow striped with red," the Flora Capensis says: "flowers yellow streaked with purple," and the Flora of Tropical Africa says: "Corolla bright yellow," the colour of the flowers of this species would therefore seem to be variable.

Fig. 1, branch; 2, calyx; 3, vexillum; 4, ala; 5, carina; 6, stamens; 7, pistil; 8, legume; *figs. 1 and 8 natural size, remainder enlarged.*

PLATE 533.

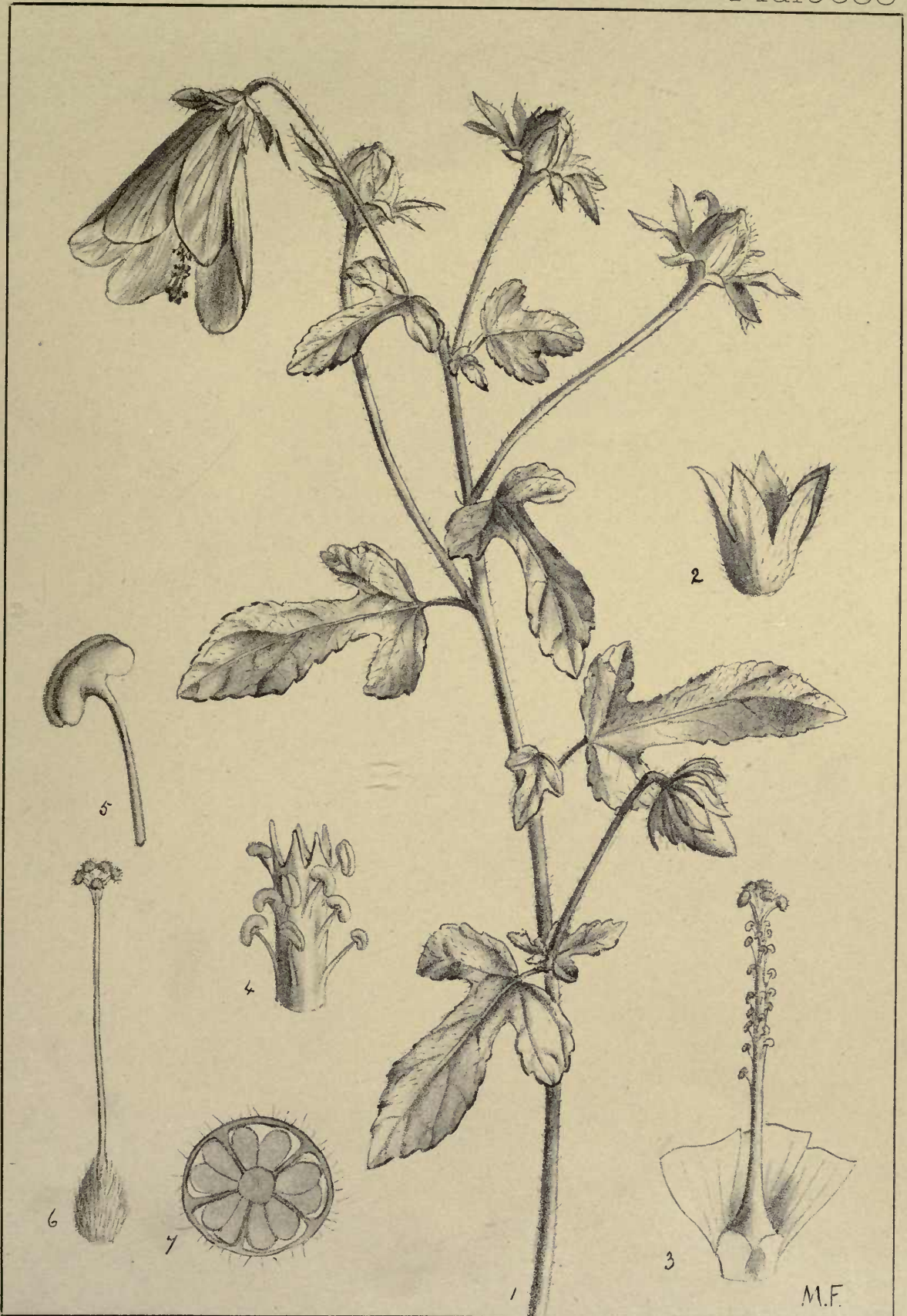
HIBISCUS PEDUNCULATUS, Cav. (Fl. Cap. Vol. I, p. 173.)
Natural Order MALVACEÆ.

An erect branching undershrub 2 to 5 feet in height bearing flowers which are deep rosy red. Stems and branches stellato-hispid with longish hairs, branches slender. Leaves petiolate, stipulate, 3-5-lobed, lobes obtuse, unequally and bluntly serrate, middle lobe longest, the whole leaf (in our specimens) from 1 to $2\frac{1}{2}$ inches long and broad; hispid on both surfaces with simple and stellate hairs; stipules subulate, 2-3-lines long; petioles $\frac{1}{2}$ to 2 inches long. Peduncles much longer than the leaves, 1-flowered. Involucel of 8-10-linear-lanceolate leaflets about as long as the calyx lobes, pubescent like the leaves. Calyx deeply 5-lobed, lobes oblong-lanceolate, acute, ciliate. Petals 5, twisted in æstivation, attached at base to the staminal column, $1\frac{1}{2}$ inch long. Stamens many, united in a tube which is 5-toothed at the apex and whose dilated base covers the ovary; anthers attached on its outer surface. Ovary 5-celled, many ovuled, hispid; styles 5, connate for nearly their whole length, stigmas capitate; seeds pubescent, brownish.

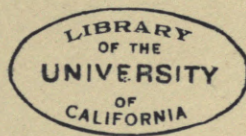
Habitat: NATAL: Nkandhla, 4000-5000 ft. alt., March, *Wylie* (Wood 8873). Inanda, 1800 ft. alt., April, *Wood* 70; near Durban, 1-200 ft. alt, without precise locality *Sutherland*.

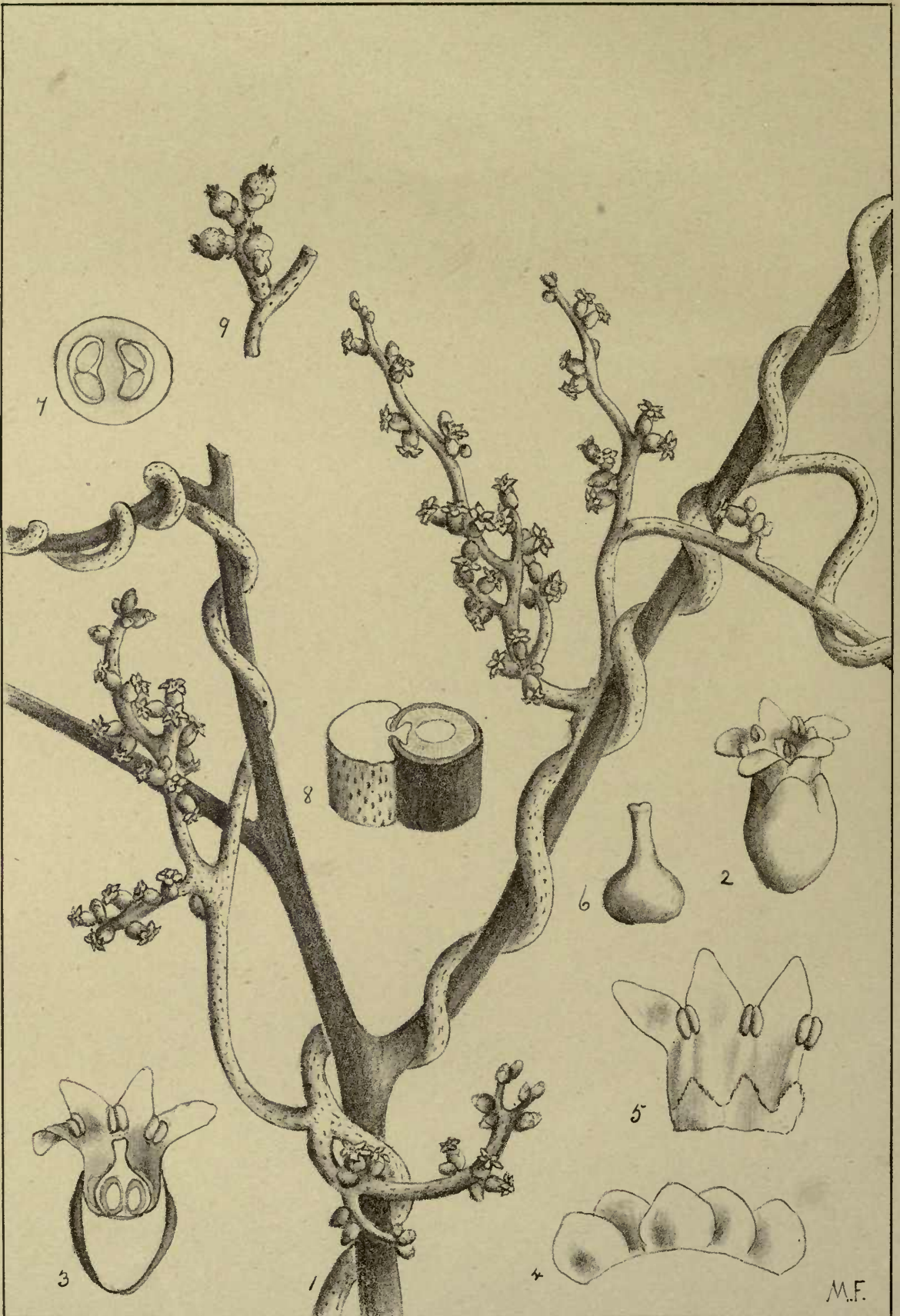
A slender shrub usually found at edges of woods or under light shade, the leaves are rather variable in shape, the flowers are borne on long peduncles by which feature it is easily distinguished from its near allies. It is not used in any way so far as known to us, but it is well worth cultivation.

Fig. 1, portion of branch; 2, calyx; 3, section of flower, part of petals removed; 4, apex of staminal column; 5, stamen; 6, pistil; 7, cross section of ovary; *fig. 1 natural size, remainder enlarged*.



Hibiscus pedunculatus, Cav.





Cuscula cassyloides, Nees.

PLATE 534.

CUSCUTA CASSYTOIDES, Nees. (Fl. Cap. Vol. IV, Section 2, p. 86.)
Natural Order CONVULVACEÆ.

A leafless parasite, stems and branches terete, glabrous, yellow-green, with numerous dark brown spots, 1-2-lines diameter, often reaching to several feet in length and being much entangled. Inflorescence cymose "the cymes congested into lax-flowered spikes" flowers dull yellow. Calyx very deeply 5-lobed, lobes broadly rounded, imbricated. Corolla campanulate, 5-lobed, lobes oblong, obtuse, at length reflexed, shorter than the tube, the whole corolla twice as long as the calyx. Stamens 5, alternate with the corolla lobes; anthers sessile at throat of tube, with a membranous scale at base of each rising from low down in the tube. Ovary 2-celled, 4-ovuled; Styles 2, connate, short, thick; stigma capitate 2-lobed. Capsule globose.

Habitat: NATAL: Noodsberg, 2000 to 3000 ft. alt., April, *Wood* 929; parasitic on *Trema bracteolata*, near Durban, 150 ft. alt, April, *Miss Franks*.

The genus *Cuscuta* includes about 80 species, natives of warm and temperate regions, all the species are parasitic, and some are known in Europe as "dodder" and do much damage in cornfields. In South Africa we have 8 species, 5 of which have been identified in Natal, these are usually parasitic on herbaceous plants and undershrubs, but the species here described is often if not always found upon trees, where it appears as tangled masses increasing by self division. The seeds of most, perhaps all of the species germinate in the ground, but after obtaining a hold on an adjacent plant they sever their connection with the ground and for the remainder of their lives are truly parasitic, obtaining their nourishment from their host by means of haustoria which penetrate the bark as shown by the artist in the figure.

Fig. 1, portion of plant on branch of host; 2, flower; 3, same, longitudinal section; 4, calyx; 5, portion of corolla opened showing stamens and scales; 6, pistil; 7, cross section of ovary; 8, cross section through parasite and host showing haustorium; 9, capsules. *Figs. 1 and 9 natural size, remainder enlarged.*

PLATE 535.

CELASTRUS BUXIFOLIUS, L. (Fl. Cap. Vol. I, p. 459.)
Natural Order CELASTRINEÆ.

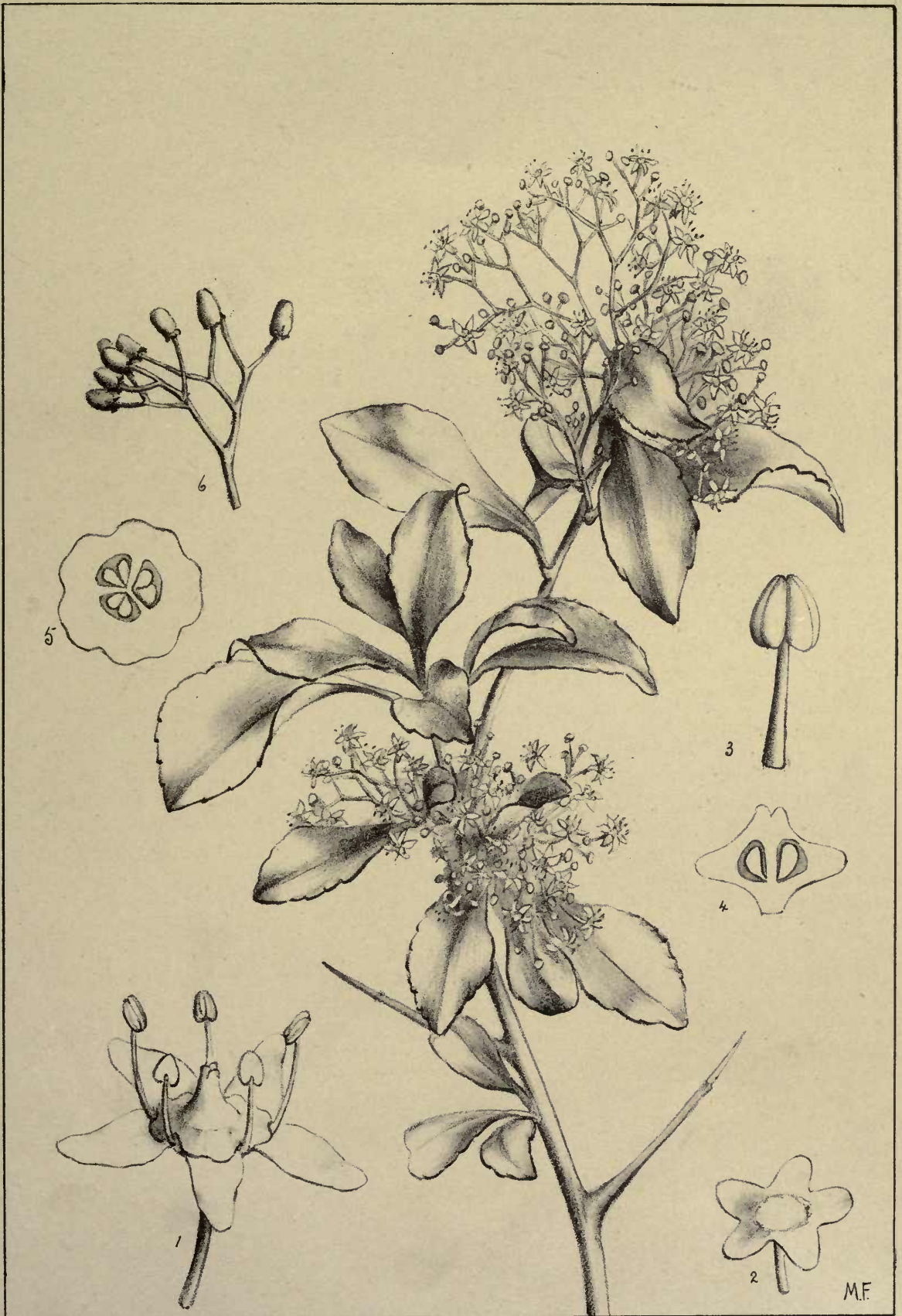
A glabrous thorny shrub, reaching to 10 or 12 feet in height. Stems and branches terete, or a little angular, dark coloured; spines sharp reaching to 3 inches in length, occasionally bearing leaves, and sometimes flowers. Leaves tufted, petiolate, usually obovate, ovate or oblong, obtuse or emarginate, tapering to base, margins entire, serrulato-dentate or crenate, smooth, dark green and shining, up to 3 inches long, $1\frac{1}{2}$ inch wide including the petiole, but varying very much in size and shape; petiole $\frac{1}{4}$ inch long. Inflorescence in axillary and terminal many flowered panicles which are usually shorter than the leaves. Flowers white. Calyx 5-parted, persistent, æstivation imbricate. Petals 5, inserted under the margin of a fleshy crenate disk which clothes the calyx tube, oblong, spreading, much longer than the calyx. Stamens 5, alternate with the petals and equalling them in length, inserted under margin of the disk, filaments subulate, anthers ovate, 2-celled. Ovary deeply sunk in the disk 3-celled, cells 2-ovuled, ovules erect. Style short, thick, stigma shortly 3-lobed. Fruit a capsule, 4-lines by 3-lines, 3-celled, two of the cells in our specimens usually abortive.

Habitat: NATAL: Near Stanger, 200 to 400 ft. alt., *Government Herbarium* 3433, (spines floriferous); Greytown, 4000 to 5000 ft. alt, April, *Wood* 8623; Inanda, 1800 ft. alt., *Wood* 499 May; Berea near Durban, 1-200 ft. alt., June, *Wood* 11684.

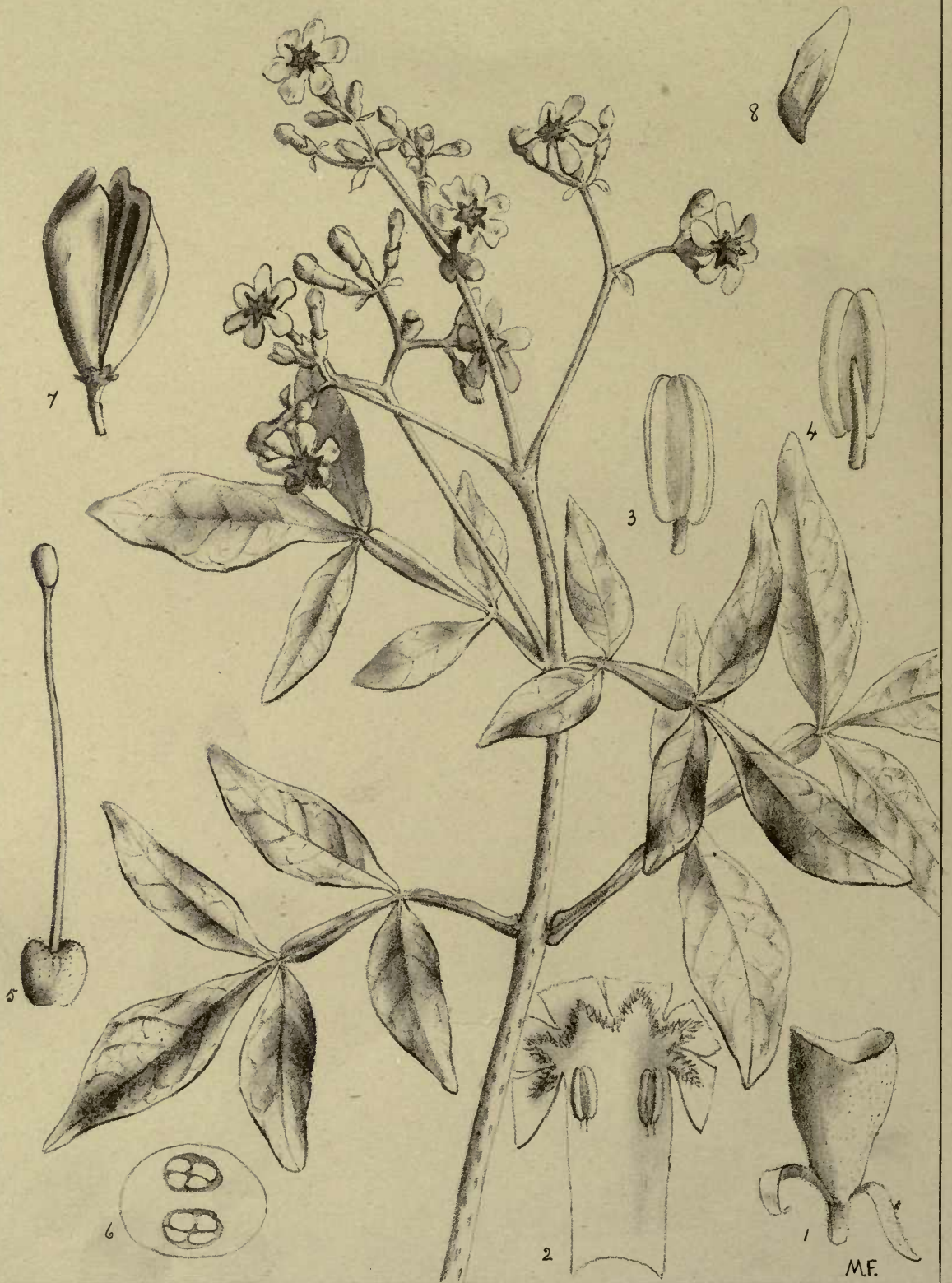
A very variable plant which is common from near Capetown to Zululand, it is not of large size, but the wood is said by Fourcade to be "heavy, hard, strong, tough, close grained, and suitable for tool handles, engraving, turnery, &c." It is, however, not much used in Natal at any rate. Pappe says of it "wood resembling boxwood, and fit for the manufacture of musical instruments, wood engraving, and all purposes for which boxwood is commonly used.

The tree from which the drawing was made and description written has been under observation for about 3 months, with the object of having the seed and also the manner of dehiscence of the capsule figured, a large number of the fruits have been obtained during this time, many of which had apparently reached their full size, every one of which had been pierced by minute insects, not a single capsule remaining on the tree to come to maturity or perfect its seeds.

Fig. 1, a floret; 2, calyx; 3, a stamen; 4, longitudinal section of ovary and disk; 5, cross section of same; 6, portion of panicle with immature capsules; figs. 1, 2, 3, 4, 5 enlarged; fig. 6 natural size.



Celastrus buxifolius, L.



Schrebera Saundersiæ Harv.

PLATE 536.

SCHREBERA SAUNDERSIÆ, Harv. (Fl. Cap. Vol. IV, Section I, p. 483.)
Natural Order OLEACEÆ.

A tree up to 30 feet in height, bark light coloured, lenticillate. Leaves opposite, exstipulate, unequally pinnate; leaflets 3-5, sessile, oblong-lanceolate to ovate, entire, quite glabrous, subcoriaceous, dark green and shining above, paler and duller beneath, lateral ones $1\frac{1}{2}$ to 2 inches long, $\frac{1}{2}$ to 1 inch wide, terminal $2\frac{1}{2}$ to 3 inches long, $\frac{3}{4}$ to 1 inch wide, all obtusely acuminate and tapering to base; common petiole 1 to $1\frac{1}{2}$ inch long, auricled at base, the auricles extending as a very narrow wing on each side of the petiole to the first pair of leaflets, between the two pairs of leaflets the petiole winged along its whole length and $\frac{1}{4}$ inch wide in the upper portion. Inflorescence paniculate, trichotomously branched, its branches opposite with a depauperated leaf at the base of each lowest branch which passes into a simple bract in all the upper branches of the inflorescence. Calyx tubular, truncate, light green. Corolla salver-shaped, tube three times as long as the calyx tube, limb 6, occasionally 5-lobed, spreading to $\frac{1}{2}$ inch wide, white with a dense tuft of erect hairs at the base of each lobe. Stamens 2, filaments short, inserted below summit of corolla tube, included. Ovary 2-celled, cells 4-ovuled, ovules pendulous, superposed; stigma clavate. Capsule obovoid, laterally compressed, separating into two boat-shaped valves with septum in centre of each. Seeds strongly compressed, with a membranous wing at apex, the wing much larger than the seed.

Habitat: NATAL: Berea 150 ft. alt., January, Wood 5201; Inanda, 1500 ft. alt., December, Wood 819; without precise locality, Gerrard 1153; Tongaat 100-200 ft. alt. McKen.

A small tree said in the Flora Capensis and also in the Thesaurus Capensis where it was first published and figured, to be a "partly scandent shrub," but in all the specimens seen by us it forms a small tree showing no sign of scandent habit. It has also been known as *S. alata*, Welw.; *S. latialata*, Gilg; and *Nathusia alata*, Hochst, and it is not improbable that the name under which it is known may have again been changed; the tree is not common, and would appear to differ considerably in the size of its leaves, and possibly also in the habit of growth; we have in our collection no other specimens than the above named with which to compare it.

Fig. 1, calyx and bract; 2, corolla tube opened, showing stamens; 3, a stamen; 4, same, back view; 5, pistil; 6, cross section of ovary; 7, capsule; 8, seed; figs. 7 and 8 natural size, remainder enlarged.

PLATES 537 AND 538.

BERKHEYA MACROCEPHALA, J. M. Wood. (Kew Bulletin 1907, p. 50).
Natural Order, COMPOSITÆ.

A perennial herb, with hard woody root, 8 to 12 inches high. Stem softly hirsute with fine cobwebby hairs. Basal leaves oblong, long attenuate at base, tapering to petiole, deeply pinnatifid with 10-15 imbricate segments on each side, the lobes rotundate, irregular, decreasing in size towards the base, spinous on the margin, spine $\frac{1}{4}$ to $1\frac{1}{2}$ lines long. Leaves including the petiole 14 to 18 inches long, 3-6 inches broad, clothed with loosely attached scanty cobwebby wool, and on both sides sparingly softly hirsute; petiole interruptedly lobe-winged, upper lobes passing into the lobes of the lamina, the lower minute; cauline leaves 6-7, narrow-oblong or oblong-lanceolate, amplexicaul, but lowest pinnatifid, the upper scarcely lobed, segments or lobes not imbricate, spinous margined, from $4\frac{3}{4}$ inch (lowest) to $\frac{3}{4}$ inch (highest) long, 2 inches to 5-lines broad. Heads solitary on the stems, cobwebby wooly at base, 4 to $4\frac{1}{2}$ inches diameter; involucral bracts linear or lanceolate-linear, 2 inches long by 3 lines broad, pungent at apex, spinulose on margin, rigid, prominently veined; receptacle densely covered with very numerous linear-oblong spinulosely serrate palæ. Florets yellow, numerous, rays a little longer than the involucral scales, acute at apex, 4-dentate; disk florets deeply 5-lobed, lobes linear, acute; achenes silky; pappus biseriate, paleaceous, palæ oblong, obtuse or acute, lacerate, serrulate or sub. entire.

Habitat: NATAL: Hillside near Richmond in open ground 1800 to 2000 ft. alt., October, Wood 10,031.

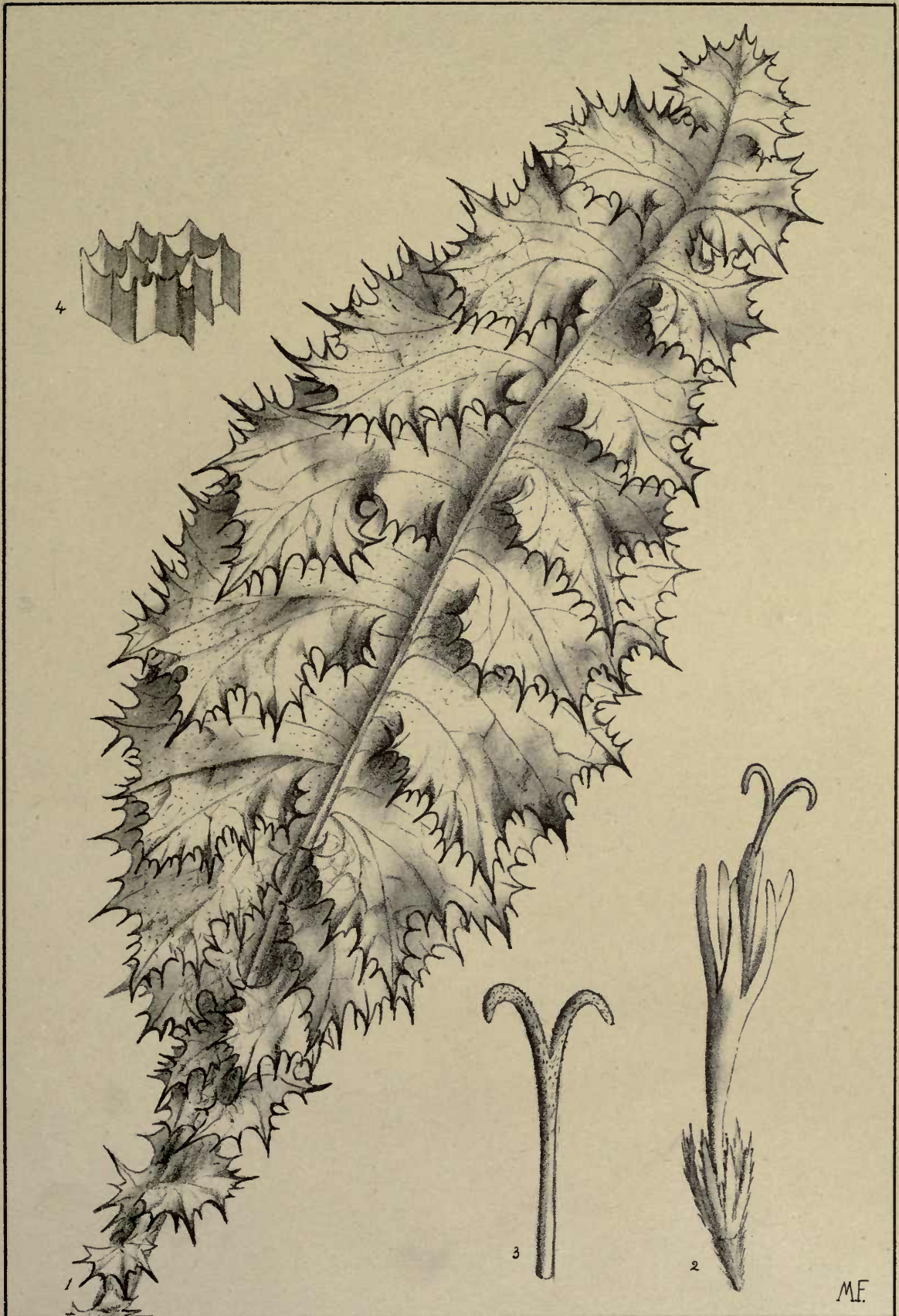
This plant is near to *Berkheya latifolia*, Wood & Evans, which was figured in Vol. III, plate 221 of the present work, but the heads are larger and solitary, not racemose-paniculate and the involucre is distinct. The flower heads are larger than in any other species of the genus known to us, and so far as we know the plant has only been found in the locality here given.

Plate 537, fig. 1, upper portion of stem with flower-head; 2, ray floret, upper portion removed; 3, two stamens; 4, achene; fig. 1 *natural size*, remainder *enlarged*.

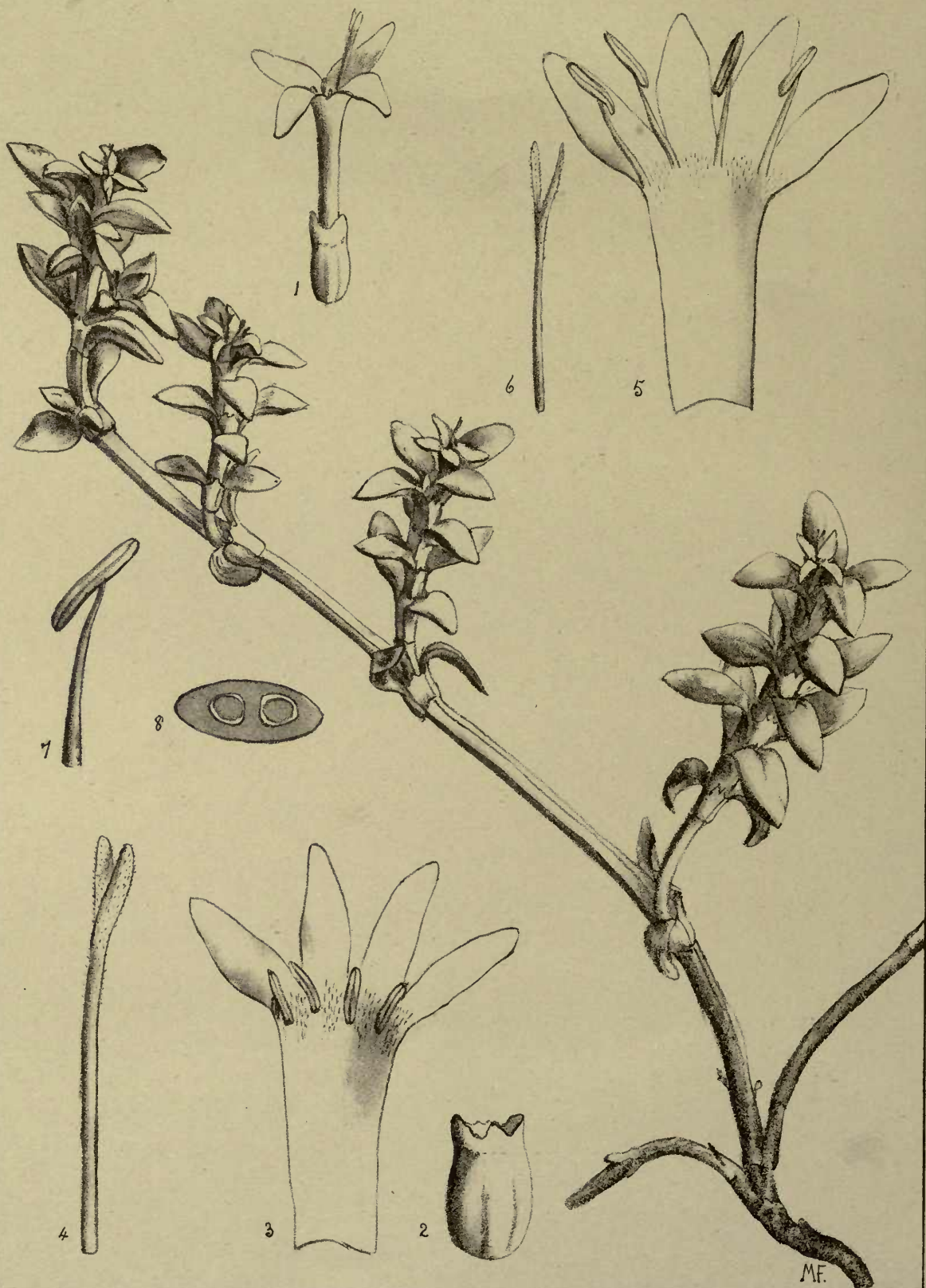
Plate 538, fig. 1, a leaf; 2, disk floret; 3, style and stigma; 4, portion of receptacle; fig. 1 *natural size*, remainder *enlarged*.



Berkheya macrocephala, J.M. Wood.



Berkheya macrocephala, J.M. Wood.



Hydrophylax carnosa, Sond.

PLATE 539.

HYDROPHYLAX CARNOSA, Sond. (Fl. Cap. Vol. III, p. 25.)
Natural Order RUBIACEÆ.

A fleshy glabrous creeping herb. Stems decumbent; branching, often several feet long, terete, dark coloured; branches smooth, ascending, flattened and deeply grooved on one face, remainder rounded, each ridge of the groove continuous or nearly so with the outer margin of the leaf above it. Leaves opposite, decussate, oblong, acute, sessile, fleshy, $\frac{1}{2}$ inch long, $\frac{1}{4}$ inch broad; stipules with a broad base and with the leaves forming a cup round the branch, sometimes acute, often 2-3-or more toothed. Flowers white, dimorphic. Calyx tubular minutely and irregularly lobed. Corolla salver-shaped, the tube villous internally, limb, 4-lobed, lobes oblong, shorter than tube, the whole flower $\frac{1}{2}$ inch long. Stamens 4, inserted at the sinuses of the corolla; anthers linear-oblong. Ovary inferior, compressed, 2-celled, cells 1-seeded; styles 2-lobed. Capsule oblong-ovate, compressed, 3-lines long, 2-lines broad, crowned by remains of the calyx.

Habitat: NATAL: Without precise locality, *Gerrard & McKen*. Sea beach in sand, May, *Miss Franks*, (*Wood* 11,683.)

The genus *Hydrophylax* includes according to the *Genera Plantarum* three species only, one widely dispersed in India, one in Madagascar, the other in Natal, the generic name is derived from two words signifying water, and a keeper or guardian, the plants always grow by the sea shore.

Hydrophylax carnosus is described in the *Flora Capensis*, but the only localities there given for it are "sandy coasts of Zitzikamma, *Cooper*," and Port Natal *Gerrard & McKen*," to which the above named locality may be added. In no description of genus or species to which we have access is the fact of the plant being dimorphic mentioned, though this is plainly shown by the artist on the accompanying plate.

Fig. 1, flower; 2, ovary and calyx; 3, corolla opened short-stamened form; 4, style of same; 5, long-stamened form, corolla opened; 6, style of same; 7, stamen; 8, cross section of ovary; *all enlarged*.

PLATE 540.

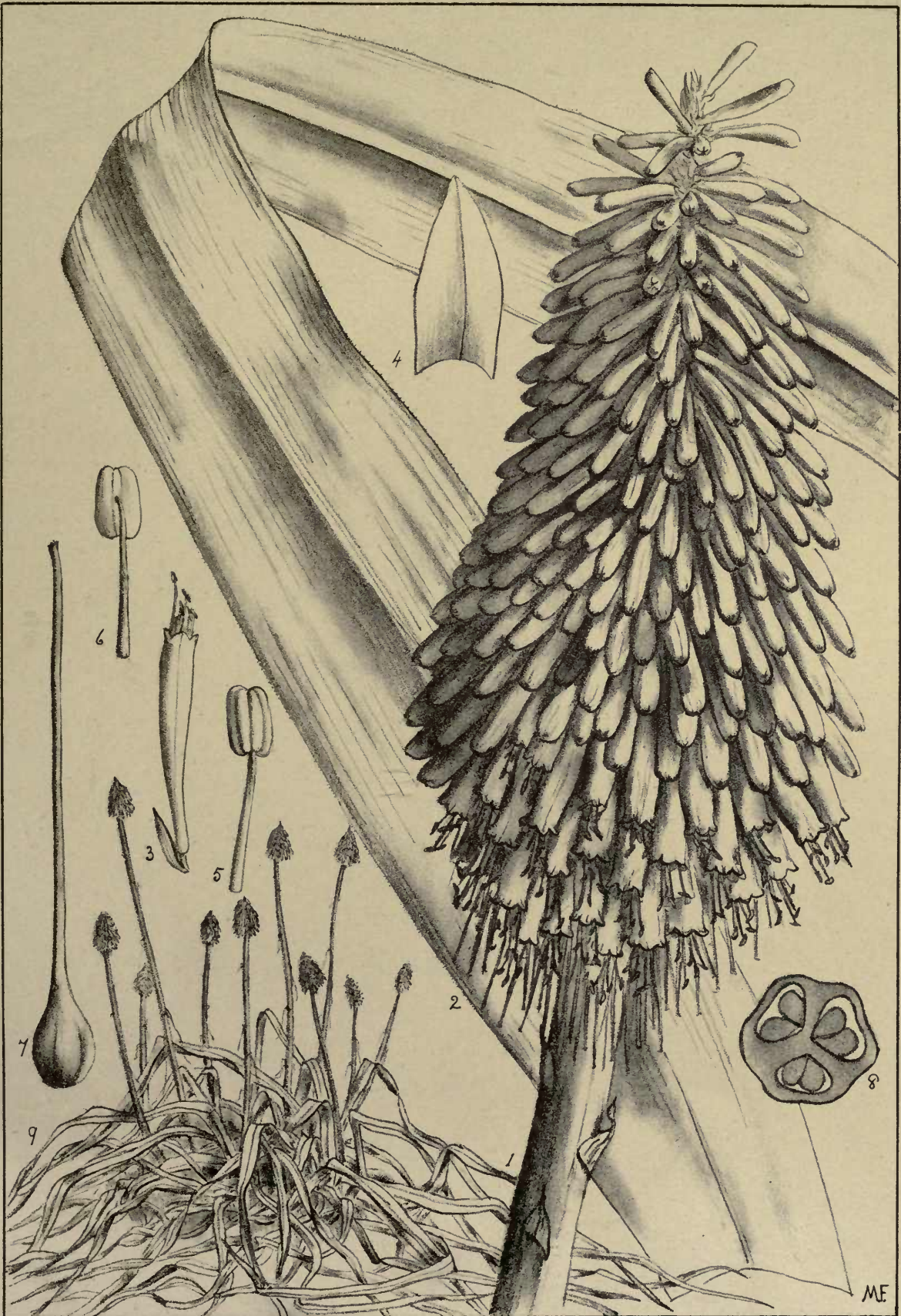
KNIPHOFIA ROOPERI, Lemaire. (Fl. Cap. Vol. VI, p. 283.)
Natural Order LILIACEÆ.

A perennial stemless plant. Leaves many, ensiform, acuminate, 4 to 7 feet long, $1\frac{1}{2}$ to $1\frac{3}{4}$ inches broad at base, very acutely keeled for the whole of their length, scabrous on margins and on keel in its upper portion; with 15 to 20 close vertical veins on each side of the midrib. Peduncles stout, erect, 4 feet long to base of raceme, and bearing a few depauperated leaves, the lowest one 12 to 14 inches long, $\frac{1}{2}$ inch broad at base, tapering suddenly at first, then gradually to 1 line broad. Raceme very densely many flowered, 4 to 6 inches long, 2 to 3 inches diameter; lowest and open flowers yellow, upper bright orange-red; perianth cylindrical $1\frac{1}{2}$ to $1\frac{3}{4}$ inch long, $\frac{1}{4}$ inch diameter at throat, 6-toothed, the teeth 1-line long, a little broader than long, with faint green keel, pedicels very short, bracts oblong, acute, $\frac{1}{4}$ inch long, scarious. Stamens 6, inserted under the ovary, the three opposite the inner segments longest, at maturity projecting 5 to 6 lines beyond the perianth, filaments filiform; anthers oblong, dorsifixed, versatile. Ovary sessile, ovoid, 3-celled, many ovuled, ovules superposed; style filiform, finally exserted 6 to 8 lines beyond the perianth; stigma minute, capitate, seeds triquetrous.

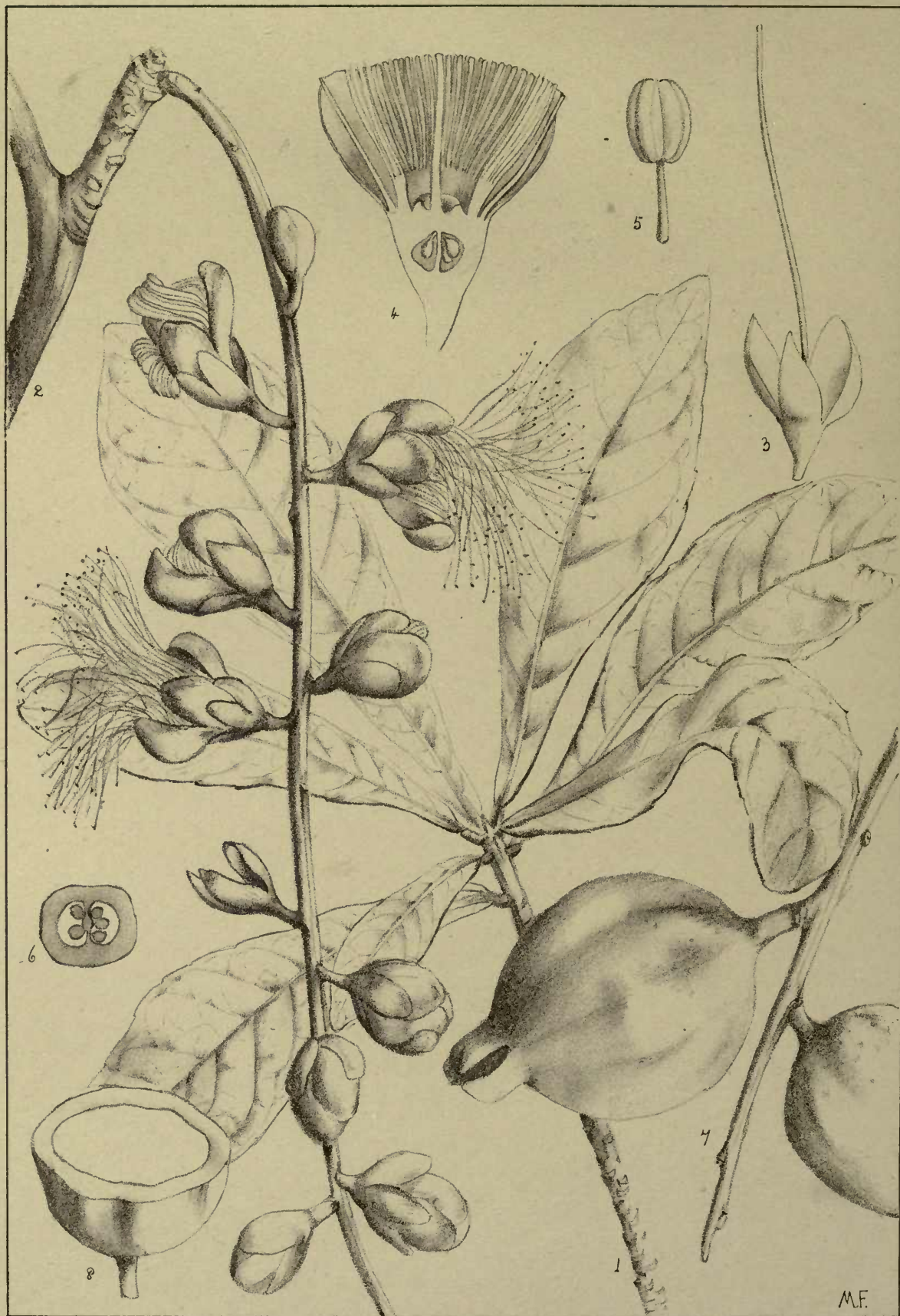
Habitat : NATAL : Near Sinkwasi River, 100 ft. alt., *Wood*.

In the Flora Capensis Natal is not quoted for this species, the only locality given being "British Kaffraria, Cooper," but the plant from which the drawing was made and the description written was brought by the writer from near Sinkwasi River, and has been growing in the Gardens for many years. It agrees fairly well with the description of *K. Rooperi* as given in the Flora Capensis, but the difference between this species and some forms of *K. aloides* seem to be scarcely sufficient for the establishment of a new species.

Fig. 1, raceme; 2, lower portion of leaf; 3, flower; 4, bract; 5, stamen; 6, same, back view; 7, pistil; 8, cross section of ovary; 9, clump of plants, much reduced; *Fig. 1, 2 and 3 natural size, 4 to 8 enlarged.*



Kniphofia Rooperi, Lemaire.



Barringtonia racemosa, Roxb.

PLATE 541.

BARRINGTONIA RACEMOSA, Roxb. (Fl. Cap. Vol. II, p. 523).
Natural Order MYRTACEÆ.

A tree 20 to 50 feet in height, usually found in moist places near the sea or on banks of rivers. Leaves alternate, crowded at ends of branches, cuneate-obovate, acute or obtuse, margins entire or obscurely serrate, midrib very prominent beneath; quite glabrous; 6 to 12 inches long, 3 to 5 inches broad, petiole very short, dark coloured and swollen. Inflorescence racemose, racemes pendulous, a foot or more long. Calyx 2-4-cleft, dark brown, subcoriaceous, tube turbinate, the lobes ovate with a broad base $\frac{1}{2}$ inch long, concave. Petals 4, inserted on margin of calyx tube, ovate, pinky-white, 10 to 12 lines long. Stamens numerous, in several rows, white, inserted with the petals, filaments filiform, connate at base, much longer than the petals; anthers very small, subglobose, 2-celled. Ovary inferior, 2-4-celled, surmounted by a fleshy ring through which the style passes. Style slender, much longer than the stamens; stigma simple. Fruit fleshy, crowned by the limb of the calyx, somewhat 4 angled, the angles much rounded, 1-seeded, the remainder of the cells abortive.

Habitat: NATAL: Drege; Gueinzius 459; 543; 575; on the banks of the Estuaries at mouths of the rivers throughout the colony.

A large tree found only in the coast districts and near the sea, and in Natal not very common, but in the East Coast districts of South Africa it is much more plentiful, and it is said that it is found lining the banks of the Rovuma River for more than 20 miles, it is also found near the Zambesi River. Also a native of the Moluccas, Penang, the delta of the Ganges and Malabar. Its root is said to be slightly bitter and is "considered by the Hindus to be aperient, cooling and febrifugal." The specimen from which the drawing was made was procured from a garden on the Berea near Durban, growing at an altitude of 200 feet or more above the sea level.

Fig. 1, branch with leaves *much reduced*; 2, raceme; 3, calyx and style; 4, longitudinal section of lower portion of flower; 5, anther; 6, cross section of ovary; 7, fruit; 8, cross section of same; *figs. 2, 7, 8 natural size, remainder enlarged.*

PLATE 542.

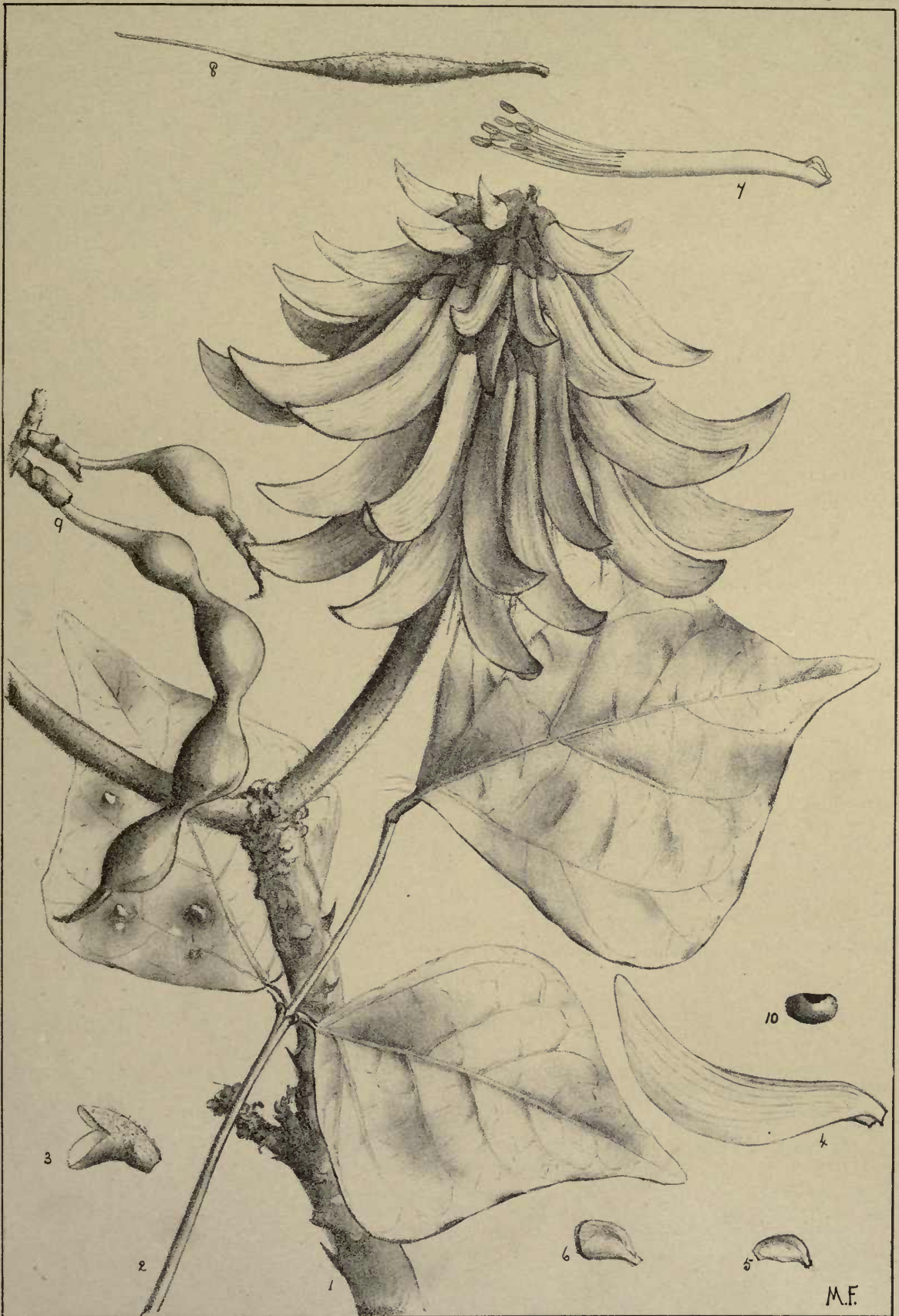
ERYTHRINA CAFFRA, Thunb. (Fl. Cap. Vol. 2, p. 236.)
Natural Order LEGUMINOSÆ.

A tree 20 to 50 feet in height. Branches pale coloured, rugose, prickly, the prickles dark coloured, up to $\frac{1}{4}$ inch or more long, broad based, usually a little curved, very sharp. Leaves clustered near ends of the twigs, trifoliolate, common petiole reaching to 8 inches in length, unarmed, the terminal leaflet 2 inches above the lateral pair and bearing two small glands on its upper surface at the junction of the petioles of the lateral leaflets, which are sub-rhomboid with an obtuse apex, quite entire, glabrous, $2\frac{1}{2}$ to $3\frac{1}{2}$ inches long and broad, the terminal leaflet oblate and more or less cuneate at base, $2\frac{1}{2}$ to $3\frac{1}{2}$ inches long, $3\frac{1}{2}$ to $4\frac{1}{2}$ broad, entire, glabrous. Inflorescence racemose, the racemes densely many-flowered, the flowers crowded at apical portion of the peduncle which is 3 to 6 inches long, $\frac{1}{4}$ inch thick, terete, velvety-puberulous, dark brown. Calyx tubular, more or less distinctly 2-lipped, brown velvety externally, 4 to 5-lines long. Corolla papilionaceous, bright scarlet, vexillum conduplicate, 2 inches long, 1 inch broad when expanded, ensiform; alæ oblong, curved, 2 to 5-lines long, yellow-green; carina broadly obovate, equalling the alæ. Stamens 10, exserted, diadelphous, the vexillary filament free to base; anthers linear-oblong, 2-celled, dorsifixed. Ovary stipitate. Legume few seeded, moniliform. Seeds scarlet, hilum black.

Habitat: NATAL: A common tree in coast and midland districts.

One species of this genus, *E. tomentosa* was figured and described in this work, Vol. IV, Plates 384, 385, the species here figured is a much more common one in coast and midland districts, and is commonly known as "Kafir Boom," and its native name is Umsinsi; the roots of most of the species are large, often larger than the stems, the wood is very soft, and the only reason why this species is grown is either on account of its very ornamental flowers, or for posts in the ground as it easily takes root, and is free from the attacks of termites. A variety is found whose flowers are of a dingy white, but it is merely a curiosity. We have two other species in Natal, viz., *E. Humiana*, a very handsome shrub, and *E. Zeyheri*, an upland species, with an enormous rootstock, apparently sending up leafy flowering shoots in the summer which in most localities die down in the winter. The leaves of *E. caffra* and probably of some of the other species also are commonly attacked by a gall producing insect, most likely one of the Hymenoptera. Mr. Claude Fuller says of it "the interesting feature of this plant "gall is that it increases after the maker has left it. This may be more or less "a natural effect, but as in the untenanted galls, thrips and mites both abound, "it is possible that the growth of the galls subsequent to the emergence of "the wasp is due to these other creatures."

Fig. 1, upper portion of branch with raceme; 2, a leaf; 3, calyx; 4, vexillum; 5, ala; 6, carina; 7, stamens; 8, pistil; 9, legume; 10, seed; *figs. 1, 2, 4, 5, 6, 9, 10 natural size; figs. 3, 7, 8 enlarged.*



Erythrina caffra, Thunb.



Vernonia angulifolia, DC.

PLATE 543.

VERNONIA ANGULIFOLIA, D.C. (Fl. Cap. Vol. III, p. 49.)
Natural Order COMPOSITÆ.

A stout much branched herbaceous climber, probably perennial, the branches, leaves and inflorescence very minutely puberulous, branches somewhat angular and faintly striate. Flowers pinky white. Leaves petiolate, chiefly opposite, occasionally alternate, varying much in shape, from ovate acuminate and quite entire to deltoid-ovate with few obtuse or acute lateral angles on one or both sides, to shortly and bluntly 3-lobed, or sometimes coarsely toothed, acute or obtuse, cuneate at base, more or less decurrent on the petiole, 3-5-veined at base; 1 to $2\frac{1}{2}$ inches long, $\frac{3}{4}$ to 2 inches broad, petiole $\frac{1}{2}$ to 1 inch long, flat or channelled above, rounded beneath. Inflorescence paniculate, the panicles leafy, axillary or terminal, the branches loosely corymbose; heads oblong, 6-10-flowered, homogamous; involucre scales in two or three series, linear oblong, inner ones 2 lines long, outer gradually shorter, obtuse with green keel, and membranous margins, ciliate at apex, and for a short distance below it; pappus white, in two series, inner ones longest. Corolla deeply 5-fid, the lobes linear. Achenes clothed with long, white, silky hairs.

Habitat: NATAL: *Drege*; *Krauss* 223; *Gerrard* 587; *Plant* 40; *Gerrard & McKen* 334; Berea, 1-200 feet alt., *Wood* 4875; Inanda, 1800 feet alt., *Wood*, 145; Berea, July, *Wood* 11687.

A wide climbing plant, flowering profusely in June and July; in the coast districts it is common at edges of woods and similar places; it has also been gathered up to at least 2000 feet above sea level, and probably extends further than that in favourable situations; the flowers are at first rather deep in colour, fading with age to almost white, this being probably due to the situation with regard to sunshine in which the plants are found.

Fig. 1, involucre; 2, a floret; 3, three of the stamens; 4, style and stigma; all enlarged.

PLATE 544.

PUPALIA ATROPURPUREA, Moq. (Fl. Cap. Vol. V, Sect. I, Part II, p. 424.)
Natural Order AMARANTACEÆ.

An annual or biennial herb with long straggling branches, and small green flowers. Stems 2 to 5 feet high; internodes terete, green, glabrous or slightly pubescent, nodes swollen and compressed, usually reddish-brown; branches similar to the stems, but nodes not, or scarcely, swollen or coloured. Leaves opposite, petiolate, ovate-acuminate to broadly lanceolate, quite entire, cuneate or more or less unequal at base, glabrous and shining above, pale and dull beneath, veins more or less prominent on both surfaces; 1 to 3 inches long, $\frac{1}{2}$ to $1\frac{1}{2}$ inch wide; petiole 2 to 7 lines long. Flowers in lax terminal spikes, composed of clusters of 3 perfect and 4 sterile flowers, the sterile ones reduced to hooked reddish purple awns; bracts, lowest lanceolate, remainder ovate-lanceolate. Perianth segments 5, broadly lanceolate, clothed with cottony wool, 3-nerved. Stamens 5, shortly connate at base, anthers 2-celled, didymous. Ovary ovoid; style slender, stigma capitellate. Utricle enclosed in the perianth, ovoid, compressed, membranous. Seeds ellipsoid $\frac{1}{16}$ inch long, $\frac{1}{12}$ inch wide, black, and shining.

Habitat: NATAL: Near Durban, *Peddie*; *Rehmann*, 8744; Coastland, *Sutherland*; and without precise locality, *Gerrard* 546; 476; Berea, near Durban, 200 feet alt., June, *Wood* 11686.

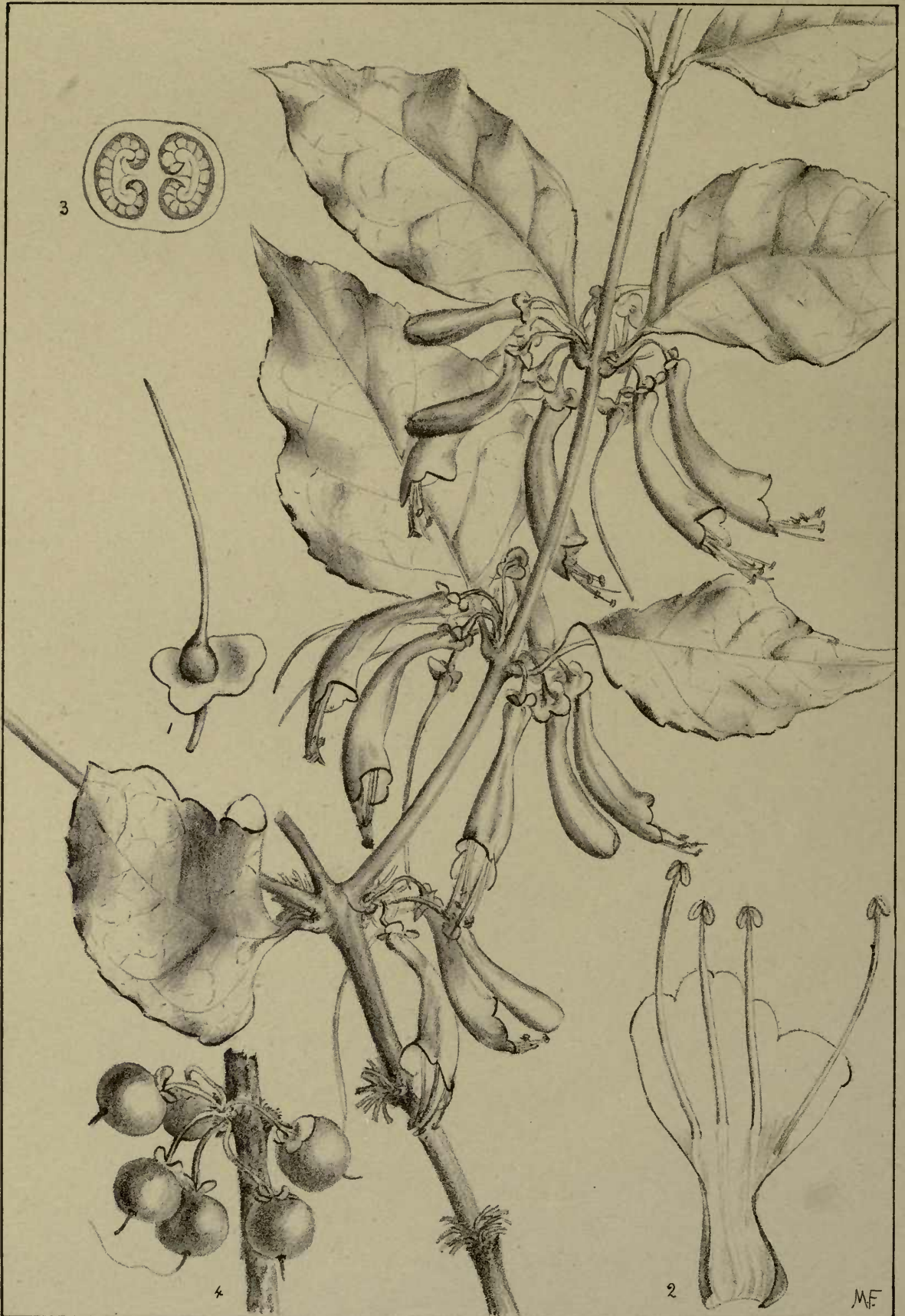
An annual herb with long straggling stems and branches, usually found at edges of woods and thickets. According to the part of the Flora Capensis lately published the genus includes 6 species in Tropical Africa, Mascarene Isles, and Tropical Asia; of these the above described species and *P. lappacea* are the only two found in South Africa, the other species *P. lappacea* having been collected by the writer in the "Thorns" near Weenen, at 3000 to 4000 feet alt., and so far as at present known *P. atropurpurea* appears only to have been found in the coast districts so far as Natal is concerned, and in the quotations of its collection in other parts of South Africa the heights quoted are under 1000, under 500 and under 200 feet. The hooked purple awns would most likely be injurious to wool.

Fig. 1, stem with leaves and portion of branches; 2, upper portion of raceme; 3, a cluster of flowers; 4, a bract; 5, bracteole; 6, flower; 7, stamens; 8, pistil; 9, same, longitudinal section; 10, a seed; 11, cluster of spines and bract, immature; 12, same at maturity; figs. 1 and 2 natural size, remainder enlarged.



M.F.

Pupalia atropurpurea. Moq.



Halleria lucida, Linn.

PLATE 545.

HALLERIA LUCIDA, Linn. (Fl. Cap. Vol. IV, Sec. II, p. 207.)
Natural Order SCROPHULARIACEÆ.

A small tree reaching to 20 feet in height, bearing numbers of solitary or clustered deep orange-red flowers, either in the axils of the leaves, or lateral on the trunk or branches. Branches numerous, usually opposite, branchlets slender, leafy. Leaves opposite, petiolate, exstipulate, ovate-acuminate, narrowed to the petiole, margins serrate except at the basal portion, smooth, glabrous, bright green, veiny; 1 to 4 inches long, $\frac{1}{2}$ to 3 inches broad; petioles $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Peduncles up to $\frac{1}{2}$ inch long, having two minute opposite bracts placed from $\frac{1}{4}$ to $\frac{1}{2}$ inch from the base. Calyx tube widely conical, lobes 3-5, unequal, obtuse, spreading, green. Corolla 1 inch long, tubular, slightly curved, gibbous at base, widening to throat, limb short, oblique, lobes 4-5, unequal, very obtuse, minutely ciliate. Stamens 4, exserted, didynamous, inserted about the middle of the corolla tube, filaments filiform; anthers 2-celled, cells divergent. Style filiform, longer than the stamens; stigma obtuse. Ovary 2-celled, many ovuled. Fruit baccate, globose, $\frac{1}{2}$ inch diameter, indehiscent, "purple when ripe." Ripe seeds not seen.

Habitat: NATAL: Inanda, 1800 ft. alt., *Wood* 218; near Pinetown, 1000 ft. alt., August, *Wood* 4894; Crown Forest Icengena, *F. O. Fernando*. Not uncommon especially in coast and midland districts.

The genus *Halleria* includes 6 species, two of which are found in Madagascar, one in Abyssinia, and three in South Africa, *H. lucida* being the only one yet reported from Natal. Burchell says that the berries are much eaten by the Hottentots; the tree is known to the Zulus as Iminza, and they also eat the ripe berries. Of the wood Fourcade says: "heavy hard, very strong, moderately, elastic, close grained. * * * used by the natives for assegai handles." Pappe says in his *Silva Capensis*: "Wood like red beech, but of a finer grain, hard, tough and well adapted for carpenters' work, planes, screws, joiners' benches, and tools of every description. It also supplies the wagonmaker with a good article for poles, etc."

Fig. 1, calyx and pistil; 2, corolla opened, showing stamens; 3, cross section of ovary; 4, cluster of berries, *natural size*; *figs. 1, 2, 3 enlarged*.

PLATE 546.

GERBERA NATALENSIS, Sch. Bip. (in Flora XXVII, 1844, 778.)
Natural Order COMPOSITÆ.

A stemless perennial herb, with radical leaves and cream coloured or white flowers the rays often pink outside, on long 1-flowered scapes. Rootstock bearing elongated tubers 3 to 4 inches long, $\frac{1}{8}$ in. thick in centre. Leaves radical, petiolate, oblong, narrow-oblong to lanceolate, entire, clothed on both surfaces with long white silky hairs, densely so when young; ciliate with similar hairs from a tubercular base; petiole $\frac{1}{2}$ inch long, lamina 1 to $2\frac{1}{2}$ inches long. Scape pilose with white silky hairs, 3 to 6 inches long, 1-headed; heads radiate, heterogamous. Involucral scales in 2-3 rows, inner row longest, much shorter than the ray florets; linear, acuminate, finely pubescent on outer surface. Ray florets in two rows, female, outer row elongate, bilabiate, upper lip minute, outer linear-oblong; florets of inner row much shorter, subtubular, bilabiate, outer lip longest, minutely 3-fid, inner very short, bifid; disk florets similar but outer lip larger, male. Anthers tailed. Pappus copious, in two or more rows, of rough bristles. Styles of marginal florets exserted, bifid; of disk florets shorter, bifid. Achenes shortly beaked, those of the outer ray florets densely hispidulous, of the disk sparsely or very sparsely so.

Habitat: NATAL: Inanda, 1800 ft. alt., February, *Wood* 203; Polela, 5000 ft. alt., July, *Evans* 515; Sydenham, 400 to 600 ft. alt., August, *Wood* 11697.

Of the genus *Gerbera*, two species have already been figured and described in this work, *G. Kraussii* in Vol. I, plate 56, and *G. aurantiaca* in Vol. IV, plate 371. The plant here described is smaller than either, but not the smallest of the Natal species, as *G. parva* collected by Mr. M. S. Evans on the Drakensberg at 6000 to 7000 feet alt., is very much smaller than *G. natalensis*, its leaves being scarcely over $\frac{1}{2}$ inch in either length or breadth.

The *Gerberas* are usually, perhaps always, found in open ground, and the one here described is amongst the earliest of the flowers to appear in the Spring, and often appears in abundance on hills from which the grass has been recently burned off.

Fig. 1, outer ray floret; 2, inner ray floret; 3, style of same; 4, disk floret; 5, three of the stamens; 6, achene; *all enlarged*.



Gerbera natalensis, Sch. Bip.



Wrightia natalensis, Stapf.

PLATE 547.

WRIGHTIA NATALENSIS, Stapf. (Fl. Cap. Vol. IV, Sec. I, p. 509.)
Natural Order APOCYNACEÆ.

A shrub 8 to 12 feet in height, young branches rusty-pubescent, older glabrous, bark grey. Leaves lanceolate-acuminate, cuneate at base, reaching to $3\frac{1}{2}$ inches long, 1 inch wide, young ones bearing a few minute hairs at base on lower surface, mature ones quite glabrous; veins pinnate; petiole 2 to 4 lines long. Inflorescence paniculate, panicles few-flowered, sub-corymbose, shorter than the leaves, the peduncles and pedicels rusty pubescent. Bracts linear, minute. Calyx of 5 almost free sepals, which are oblong, obtuse, with membranous margins, the three inner ones bearing minute fleshy scales, two of them with 2 scales each, one with only one scale. Corolla yellow, densely and minutely papillose on outer surface, tube 2 lines long, lobes oblong, obtuse, 4 lines long, bearing 4 "epipetalous emarginate scales which are united for half their length into a short corona, and bear each 2 filiform appendages shorter than the scales." Anthers 2 lines long, conniving in a cone. Carpels 2, oblong, free; style filiform; stigma capitate, with an obscure frill at base, and a minutely cleft tip, shorter than the anthers. Fruit not seen.

Habitat: NATAL: Umzinyati Falls, 300 to 500 ft. alt., *Haygarth in Herb. Wood* 7861; same locality, October, *Wood* 11,530 in *Colonial Herbarium* 12,420.

The genus *Wrightia* includes about 20 species, all of which except *W. natalensis* are found "in the warmer parts of Asia, and Northern Australia." Up to the present time *W. natalensis* has not been found in any other locality than the one given above, where it was first gathered by Mr. Haygarth in 1899. The follicles, have not yet been seen by us though diligent search has been made for them, as the flowers appear to fall off without being fertilised. In one respect the above description differs from the one given in the *Flora Capensis*, where it says of the sepals, "each with one fleshy scale within." Numerous freshly gathered flowers were examined by the artist, and in every case the scales were found as described above.

Fig. 1, calyx opened; 2, a flower, calyx removed; 3, portion of the corolla, showing stamens; 4, same showing corona, stamens removed; 5, a stamen; 6, pistil; *all enlarged*.

PLATE 548.

HAEMANTHUS ALBOMACULATUS, Baker. (Fl. Cap. Vol. VI, p. 235.)
Natural Order AMARYLLIDÆE.

Rootstock a tunicated elongate bulb, tunics thick, green. Leaves 3-4, contemporary with the flowers, lorate, obtuse, suberect, a foot or more long, 1-2 inches wide in upper portion, glabrous, usually, but not always with a few white spots, very minutely ciliate. Scape compressed, light green, pubescent, 4 to 8 inches long, $\frac{1}{2}$ - $\frac{3}{4}$ inch diameter. Inflorescence in densely flowered bracteate heads, bracts 6-7, oblong, acute, white with numerous green veins, minutely ciliate, $1\frac{1}{4}$ to $1\frac{1}{2}$ inch long, in breadth varying considerably in the same head; pedicels up to $\frac{1}{4}$ inch long. Perianth white, tube cylindrical, $\frac{1}{3}$ to $\frac{1}{4}$ inch long, segments 6, linear, more than twice the length of the tube. Filaments white, longer than the corolla; anthers oblong, versatile. Style as long as the stamens. Ovary inferior, 3-celled, cells 1-ovuled. Fruit baccate, indehiscent, subglobose to oblong, compressed, or 3-angled with the angles rounded, glabrous and shining, red when ripe, 3-seeded; seeds ovate, glabrous, shining, 5 lines by 4 lines.

Habitat: NATAL: From close to the sea to at least 1000 ft. alt., Mount Moreland, 100 ft. alt., *Wood* 1006; near Durban, 20 ft. alt., *Wood* 1989. Also gathered in Pondoland by *Bachmann* 293.

Usually found at edges of woods or in light shade, and very plentiful near the sea at the mouth of the Umgeni. This species differs from *H. puniceus*, chiefly by the shape and texture of the leaves, and colour of the flowers, the latter species having, however, a much wider range being found in the Cape Colony in forests at a height above the sea of 2000 to 3000 feet, while *H. albomaculatus* is only reported from the localities above quoted.

Fig. 1, leaf, *natural size*; 2, a flower; 3, a stamen; 4, style; 5, cross section of ovary; *except fig. 1, all enlarged.*



Haemanthus albomaculatus, Baker.



Helichrysum griseum, Sond.

PLATE 549.

HELICHRYSUM GRISEUM, Sond. (Fl. Cap. Vol. III, p. 237.)
Natural Order COMPOSITÆ.

An erect herbaceous plant with simple unbranched stem, bearing numerous flower heads in a corymbose cyme at its apex. Leaves, radical ones petiolate, ovate to oblong, long tapering to base, shortly so to an acute apex, the petiole varying much in length, sometimes reaching to 4 inches or more, usually much shorter, narrowly winged; the blade up to 8 inches in length, 3 inches wide; stem leaves 2-3, stem-clasping, ovate to oblong, 3-7-veined, all densely white woolly-tomentose beneath, pilose on upper surface, the uppermost very small and lanceolate. Heads very many, discoid, the primary branches of the inflorescence loosely arranged and sub-umbellate, each bearing a cluster of pedicellate many-flowered heads at its apex; peduncle and pedicels densely woolly-tomentose. Involucre subglobose at base, its scales imbricate, their bases oblong and very woolly, then contracted and ending in a long glabrous, reddish-purple membranous linear-lanceolate apex. Receptacle minutely fimbriiferous. Florets tubular, 5-toothed; anthers sagittate; style branches obtuse, truncate. Achenes not seen.

Habitat: NATAL: *Gueinzius* 322; 590; near Durban, *Gerrard & McKen* 307; Malvern, 500 to 600 ft. alt., October, *M. Franks* (in *Colonial Herbarium* 12426); same locality *Wood* (in *Colonial Herbarium* 12056.)

A note in the *Flora Capensis* says: "Allied to *H. latifolium* from which it differs in the evidently petiolate root-leaves, the much more diffuse inflorescence, and especially in the involucreal scales. * * * There is usually a single narrow-lanceolate acuminate floral leaf about the middle of the peduncle, and one at the base of the cyme." In our specimens the leaf at the middle of the peduncle is not as here stated, but is in the whole of the specimens ovate acute. The only localities quoted for this species in the *Flora Capensis* are those given by *Gueinzius & McKen*, and we have not in our collection any specimen from outside Natal, though it is quite probable that it may occur in Pondoland also.

Fig. 1, flower head; 2, involucreal scale; 3, a floret; 4, three of the stamens; 5, style; *all enlarged*.

PLATE 550.

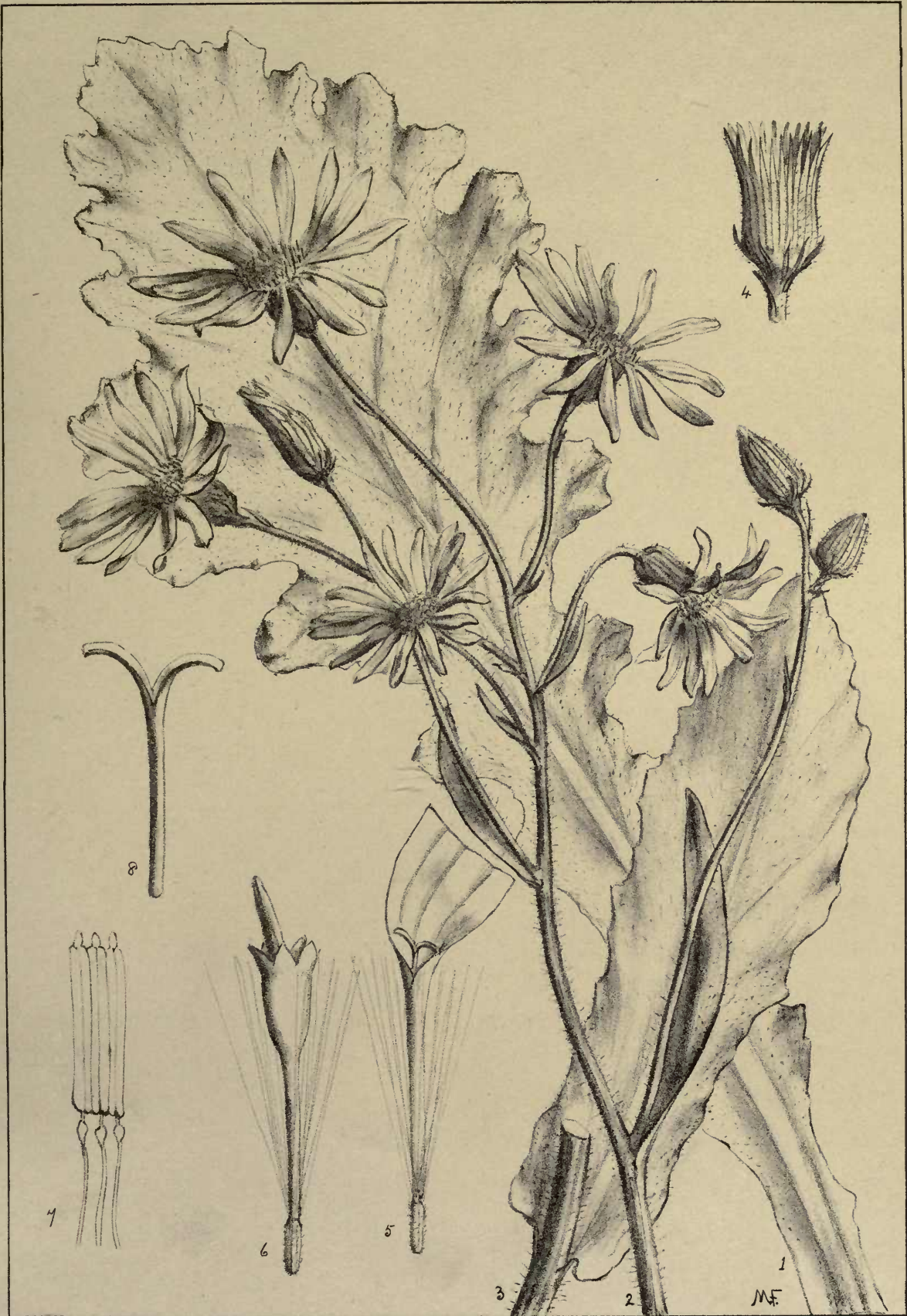
SENECIO SPECIOSUS, Willd. (Fl. Cap. Vol. III, p. 362, sub. *S. concolor* D.C.)
Natural Order COMPOSITÆ.

A perennial stemless herb. Root woody. Radical leaves petiolate, oblong-spathulate, the lamina continued along the petiole as a conspicuous wing almost or quite to the base, the whole leaf with petiole reaching to 12 inches in length, and 2 to 3 inches in width in the widest part, margin very coarsely toothed and ciliate with cellular hairs, both surfaces with similar, but more scattered hairs; stem leaves oblong, sessile, semi-stem-clasping, toothed, irregularly crenate or more or less deeply lobed, or almost entire, with similar hairs, lowest ones about 6 inches long, uppermost reaching to about 2 inches. Flowering stem reaching to 2 feet or more long, erect, terete, weak and more or less thickly covered with semitransparent cellular hairs. Inflorescence terminal, corymbose, lax, the corymbs few-headed, pedicels 1 to 1½ inch long, hairy like the stems. Involucre of many narrow pilose scales in one row, concrete in the lower portion, acuminate and tinged with pink upwards, apex dark purple or withered, calyced with a few linear scales. Heads radiate, purple, ray florets 12 to 16, linear oblong, ½ to ¾ inch long, spreading when open to 1½ or 2 inches diameter. Filaments a little dilated just below apex; anthers obtuse. Achenes (young ones) puberulous.

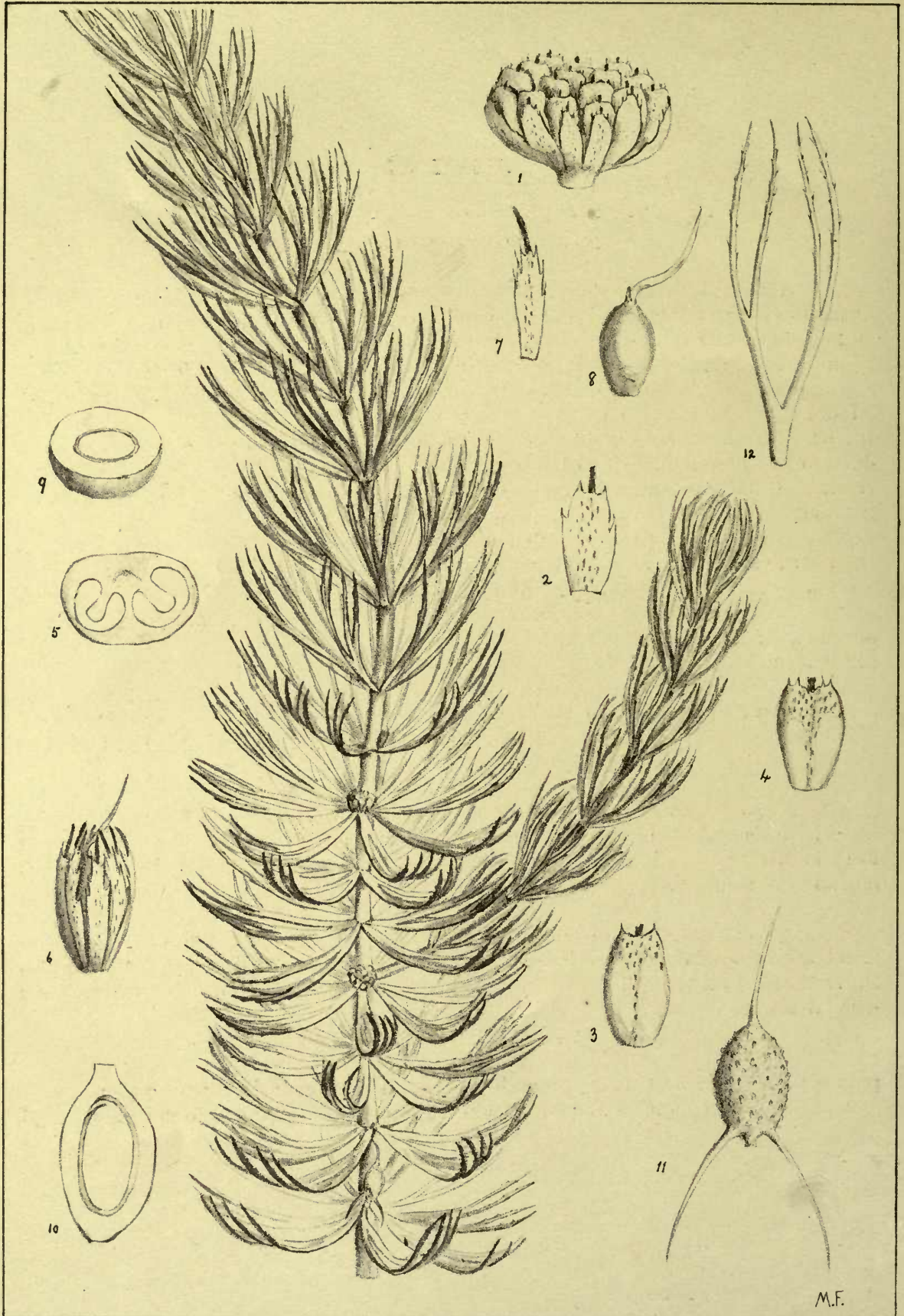
Habitat: NATAL: *Gueinzius*; *Sanderson*; Clairmont, 20 to 30 ft. alt., *Wood* in *Colonial Herbarium* 5481; Inanda, 1800 ft. alt., *Wood* 197. Also in Cape Colony.

This plant is described in the *Flora Capensis* as *S. concolor*, D.C., but is certainly not that species, the true *S. concolor* of De Candolle has been collected by the writer in the Mooi River district, but is not found in the coastland to our knowledge. *S. speciosus* is not uncommon in the coast districts, and up to at least 2000 feet alt.; it is a handsome plant and well worthy of cultivation and could no doubt be much improved; there would seem to be two varieties of it, differing chiefly in the cutting of the leaves and character of the pubescence.

Fig. 1, a radical leaf; 2, inflorescence; 3, a cauline leaf; 4, involucre; 5, ray floret; 6, disk floret; 7, three of the stamens; 8, style; *figs. 1, 2, 3 natural size, remainder enlarged.*



Senecio speciosus, Willd.



M.F.

Ceralophyllum demersum, Linn.

PLATE 551.

CERATOPHYLLUM DEMERSUM, Linn. (Fl. Br. India, Vol. V., p. 639.)

Natural Order, CERATOPHYLLÆ.

A submerged fragile slender herb. Stems reaching to 4 feet or more in length, branching, the whole plant dark green. Leaves whorled, spreading when in the water, collapsing in a tassel when removed, dichotomously cleft into linear, terete lobes, the lobes distantly and sharply toothed in their upper portion, the whole leaf clothed with minute cellular hairs, the teeth terminating in a transparent spine. Flowers monoecious, axillary, solitary, minute. Male flowers solitary in axils, perianth (or involucre), of 6-12 oblong segments which are irregular in shape, and differing in the number of teeth from 2 to 6; all apiculate. Stamens numerous, subsessile, anthers erect, 2-celled, connective produced beyond the anther-cells, truncate, each cell furnished with 1-2-projecting teeth on each side of the connective. Female flowers solitary, perianth similar to that of the male flowers, but narrower and longer, apiculus longer than in the male flowers. Ovary ovoid, sessile, 1-celled, style subulate, flattened, stigmatic on one side; ovary solitary, pendulous. Fruit an ovoid, coriaceous, compressed nut with a spongy outer covering, an elongate persistent style, and a long linear-subulate appendage diverging from the base on either side.

Habitat: NATAL: In a stagnant pool near Umgeni mouth. August, *Wood* 4000 (leaves and stems only); same locality September, *Wood* 11713 (complete specimens).

The Order Ceratophylleæ contains this one genus only. More than 30 species have been described by authors, but all are now thought to be mere varieties of the one species. In the Flora of British India three varieties are described, but our species seems not quite to agree with any of them.

These plants are said to be found in tanks and still waters in India, and also in all temperate and tropical countries. It is quite possible that this plant is more common in Natal than at present known to us, but we have met with it only in the locality above quoted.

Fig. 1, male flower; 2, perianth lobe; 3 & 4, stamens; 5, cross section of anther; 6, female flower; 7, perianth lobe of same; 8, pistil; 9, cross section of ovary; 10, longitudinal section of same; 11, capsule; 12, leaf; *all enlarged*.

PLATE 552.

HYPOXIS RIGIDULA, Baker. (Fl. Cap. Vol. 6, p. 186.)

Natural Order, *AMARYLLIDÆ*.

An erect herbaceous perennial with tuberous rootstock. Corm oblong, 1-2 inches diameter, crowned with a ring of fibres, roots thickened. Leaves 4-6 linear, plicate, coriaceous, midrib prominent beneath; erect, pilose with white hairs, 12 to 18 inches long, $\frac{1}{4}$ to $\frac{1}{3}$ inch wide, gradually narrowing to a fine point. Peduncles 2-3, up to a foot long, slender, pilose, from 2 to 8-flowered in uppermost portion; pedicels $\frac{1}{2}$ to $\frac{3}{4}$ inch long; bracts linear-subulate, $\frac{3}{4}$ to 1 inch long; the whole inflorescence more or less pilose. Perianth yellow, segments 6, cut down to the ovary, 7 lines long, 3 to 5 lines wide, spreading to 14 to 17 lines wide, oblong-lanceolate, the 3 outer ones densely pilose beneath, the 3 inner ones more sparsely so, and with green keel. Anthers $\frac{1}{8}$ inch long, versatile, filaments shorter than the anthers, thickened, yellow. Ovary 3-celled, cells many seeded, ovules superposed. Style a little shorter than the filaments. Stigmas 3, concrete, Capsule turbinate, densely villous, $\frac{1}{4}$ inch long, "slitting round the middle, not dividing into valves." Seeds globose, black.

Habitat: NATAL: Inanda, 1,800 feet alt. *Wood* 407; near Gourton, 3,000 to 4,000 feet alt., *Wood* 3433, December; near Durban, 100 to 200 feet alt., *Wood*. Tugela *Gerrard*, 1826. Also in East Griqualand, Cape Colony and Transvaal, and probably in suitable situations over the whole of South Africa.

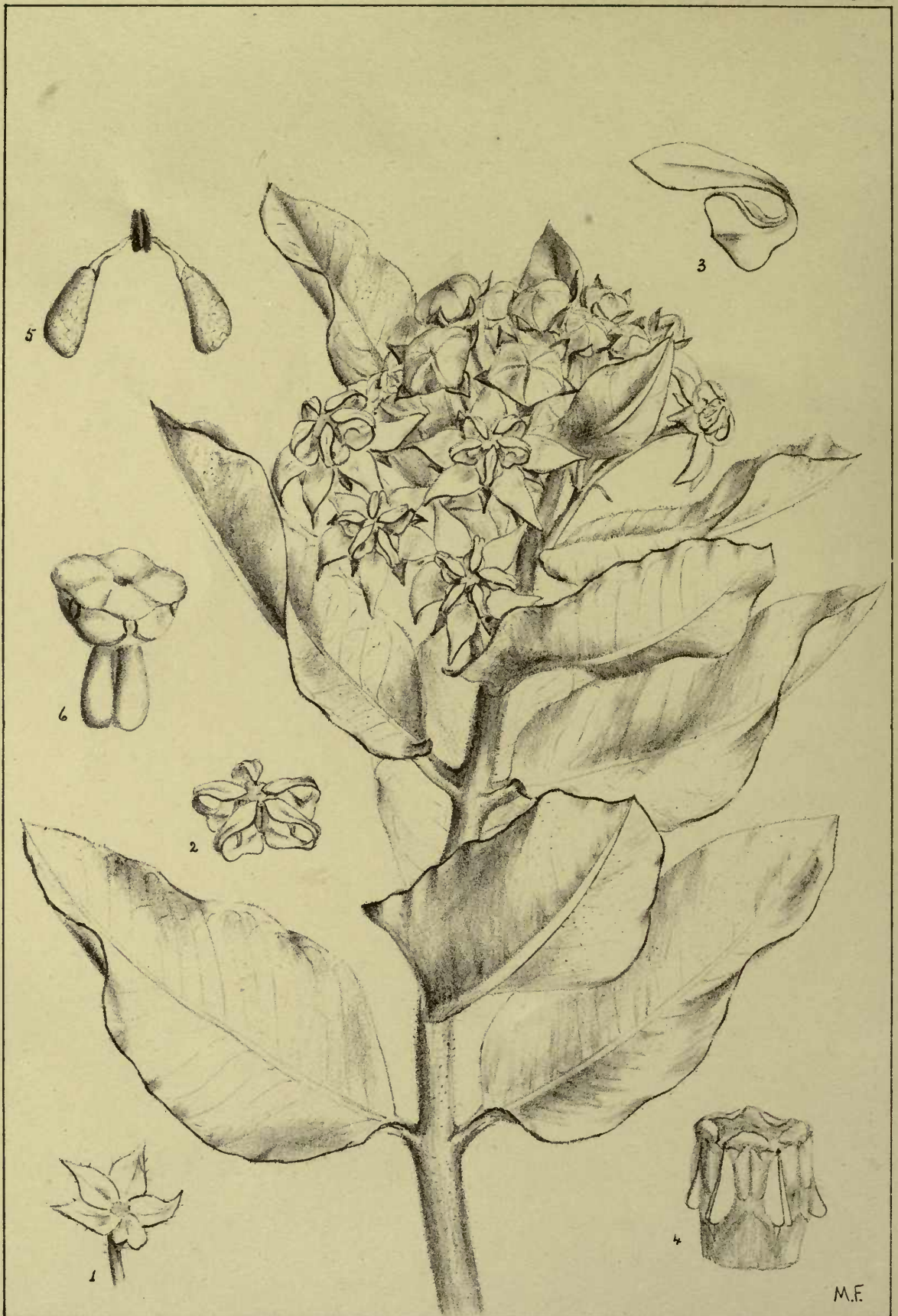
This genus includes 50-60 species, the headquarters of which are in South Africa, where 41 species are known and described, of which 19 are found in Natal, the remainder in tropical Africa, tropical Asia, Australia and America. Dr. A. Smith says of *H. sericea*, now known as *H. argentea*, var. *sericea*. "This is one of the famine roots; the bulbs are usually roasted, but sometimes boiled; women and children may be seen gathering them in the fields in time of famine. When roasted an oil exudes out of the bulbs, which is applied to cure fresh wounds on the backs of horses." Of another species he says that the resin got by roasting the bulbs is used for fastening on the assegai heads. Of another species, *H. Rooperi*, Rev. A. T. Bryant says that it is said to be very poisonous, and that the tubers, of *H. latifolia*, a common species in Natal, are also poisonous.

Fig. 1, corm; 2, leaves and peduncles; 3, a stamen; 4, style and stigmas; 5, cross section of ovary. *Figs. 1 and 2 natural size; 3, 4, 5, enlarged.*



Hypoxis rigidula, Baker.





M.F.

Pachycarpus scaber, N.E.B.

PLATE 553.

PACHYCARPUS SCABER, N. E. Brown. (Fl. Cap. Vol. 4, Sec. I, p. 719.)

Natural Order, ASCLEPIADEÆ.

Stem 1-2 feet high, 2-4 lines thick, terete, light green, purplish at base, scabrous with thickly scattered raised points. Leaves opposite, decussate, exstipulate, shortly petiolate, 2-4 inches long, $\frac{3}{4}$ -2 $\frac{1}{2}$ inches broad, oblong, elliptic oblong or elliptic ovate, acute, equally rounded at base, scabrous on both surfaces, but more so on the lower surface, margins quite entire, very scabrous, midrib thickened and prominent beneath, lateral veins very conspicuous on both surfaces, petiole $\frac{1}{4}$ inch long thickened. Inflorescence of 1-4 umbels subcorymbose in upper portion of the stem, 5-8 flowered, peduncles $\frac{1}{4}$ -1 $\frac{1}{4}$ inch long, pedicels reaching to 1 inch in length, more or less scabrous like the leaves; bracts $\frac{1}{4}$ inch long, dark brown, linear-subulate, very fugacious. Sepals 5, one third inch long, 2-2 $\frac{1}{2}$ lines broad, ovate, acute, scabrous, the keel thickened and prominent beneath. Corolla 5-lobed, the lobes reflexed, spreading, glabrous, 5 lines by 3 lines, acute and very minutely notched at apex, creamy white (in all our specimens). Corona-lobes arising at the base of the staminal column, 4-5 lines long, creamy white "dilated into two deltoid rounded auricles or transversely rhomboid at the horizontally spreading base, which is concave beneath, then abruptly contracted into a linear or linear spathulate blade $\frac{1}{3}$ -1 line broad and subacute, obtuse, emarginate, or more or less 3-lobed or 3-toothed at the apex, channelled down the back, convex or keeled down the inner face and abruptly incurved over the style apex, with 2 erect contiguous keels 1-1 $\frac{1}{2}$ line high and broad on the basal part, straight on the inner, rounded on the dorsal margin, obtuse. Staminal column 2 lines long, anther appendages orbicular reniform, very obtuse, inflexed on the rim of the depressed style-apex." Follicles not seen by us, but said in Mr. Brown's description to be "solitary, about 3 $\frac{1}{2}$ inches long, 1 $\frac{3}{4}$ inches thick, ovoid, obtuse, more or less winged at the upper part, coriaceous, glabrous."

Habitat: NATAL: Inanda 1,800 feet alt. Wood 468; Reit Vley in *Herb. Galpin* 2745; Umkomaas Valley, *Krook* (ex *Schlechter*); Zululand, *Gerrard*, 1285; Umlaas 2,000 alt., *Miss Franks* (Wood 11716.)

This plant has until lately been known as *Gomphocarpus scaber*, Harv., and was figured and described under that name in Harvey's *Thesaurus Capensis*, but in the revision of the South African species of the Order the genus *Gomphocarpus* has been discarded and the members distributed amongst other genera. *Pachycarpus scaber* is not uncommon in Natal, especially in the midlands. There appears to be some difficulty as to the colour of the flowers, which, according to Dr. Bolus, are said to be yellow. We have often met with the plant, and have always found the colour of the flowers to be as stated, creamy white. The latter part of the description here given has been copied verbatim from Mr. Brown's excellent description in the *Flora Capensis*, after comparison with our own specimens, as also the latter part of the description of *Woodia* No. 554. Of neither of these species have we seen the follicles.

Fig. 1, calyx; 2, corona and staminal column; 3, coronal lobe; 4, staminal column; 5, pollen masses; 6, pistil; all enlarged.

PLATE 554.

WOODIA VERBUCULOSA, Schlechter. (Fl. Cap. Vol. 4, Sec. I, p. 561.)

Natural Order, ASCLEPIADEÆ.

An erect herb, 6 to 10 inches high, occasionally branched at the base. Stems a little compressed, glabrous except for a puberulous line between the nodes on alternate sides. Leaves in 4-7 pairs, decussate, petiolate, 1-2½ inches long, ½-1¼ inch broad, ovate to oblong-lanceolate, acute, sharply apiculate, rounded to subcordate at base, quite glabrous, very minutely scabrous on the thickened margin, veins and veinlets conspicuous but scarcely prominent, petiole 1-3½ lines long. Inflorescence in terminal and axillary umbels, 4-8 flowered, peduncles ½-1½ inch long, pedicels 7-10 lines long, both puberulous down one side; bracts 2-3 lines long, glabrous, subulate, flowers green. Sepals 5, free almost to the base, equal to or longer than the corolla, suberect, tapering from the base to an acute apex, very thinly sprinkled with minute hairs. Corolla lobes 5, connate at base, erect, 2½-2¾ lines long, tapering to apex, strongly incurved above, margins a little revolute, quite glabrous, greenish-brown. "Corona-lobes arising at the base of the staminal column, their margins ascending it as very narrow wings, 1½ line long, 3-lobed, erect, middle lobe lanceolate-subulate, with a very prominent stout keel on the inner face on the lower part, slightly incurved and reaching to the top of the anthers; lateral lobes much shorter, linear, obtuse, very slightly falcate, quite erect on each side of the central keel, with their flat sides facing each other. Staminal column 1¼ line long; anther appendages broader than long, reniform, obtuse, very abruptly inflexed over the margin of the truncate style-apex; follicle solitary 3-3½ inches long, ¾ inch thick, stoutly fusiform, acute, beset with several series of spine-like processes ¾-1½ line long, glabrous."

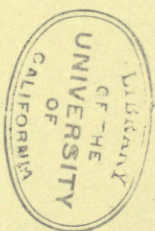
Habitat: NATAL: Near Camperdown, 2,500 feet alt.. October, *Wood*, 4079; 4966; near Umlaas River, 2,000 feet alt. October, *Miss Franks* (*Wood* 11715). Also in Griqualand East.

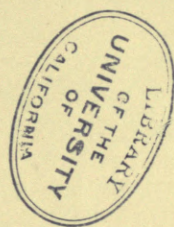
The genus *Woodia* was established by Mr., now Dr. Rudolph, Schlechter, on *Wood's* 4079. No. 4966 was collected in the same locality five years later, while No. 11715 was collected some seven miles from where the species was first found. The genus now includes 3 species, the one here described, *W. mucronata*, *N. E. Brown*, which is probably the most common, being found in Cape Colony, Transvaal, Transkei and Zululand; the third species, *W. singularis*, is at present only known from Swaziland.

Fig. 1, flower; 2, portion of calyx; 3, corolla; 4, corona and staminal column; 5, coronal lobe; 6, stamen; 7, style apex with anther appendages, seen from above; 8, pistil; 9, pollen masses; *all enlarged*.



Woodia verruculosa, Schltr.







Strophanthus speciosus, Reber.

PLATE 555.

STROPHANTHUS SPECIOSUS, Reber. (Fl. Cap. Vol. 4, Sec. I, p. 511.)

Natural Order, APOCYNACEÆ.

A rambling glabrous shrub, usually found supported by other shrubs at edges of woods. Branches and branchlets rough with scars of fallen leaves, densely lenticillate. Leaves in whorls of 3, very rarely the uppermost opposite, oblong to oblong-lanceolate, acute to shortly acuminate, margins entire, more or less recurved, coriaceous, dark green, shining above, glabrous, $1\frac{1}{2}$ - $3\frac{1}{2}$ inches long, $\frac{1}{2}$ - $1\frac{1}{4}$ inch broad; petiole 2-3 lines long, with 2-3 simple or bifid glands at base. Inflorescence in terminal or axillary cymes, which are 2-12 flowered. Flowers yellow, with brick red markings at base of the petals. Calyx 3-5 lines long, sepals 5, lanceolate-acuminate, bracts lanceolate to ovate-acuminate. Corolla 5-lobed, lower portion below insertion of the stamens tubular, 2 lines long, upper portion funnel-shaped, 4 lines long, lobes long attenuate from a broad base, the lobe twice to three times as long as the whole of the tube, the tube furnished with 10 linear scales in pairs at the throat. Stamens 5, inserted at base of the widened portion of the tube, anthers conniving in a cone, lanceolate-acuminate, sagittate, 2-celled, covered with silky hairs in upper portion. Follicles 2, lanceolate 7-8 inches long, 1 inch wide in broadest portion when ripe, tip a little thickened. Seeds many, oblong-lanceolate, glabrous, 6 lines by 2 lines, with a sessile plume, the hairs $1-1\frac{1}{2}$ inch long on a fine awn about $\frac{1}{2}$ inch long.

Habitat : NATAL: Near York, 3,000 to 4,000 feet alt. April, *Wood* 4305, (follicles, but no flowers); Zululand 6,000 ft. alt. *Wood* 7805; Polela district, October *Fernando*, 2 (*Wood* 9926). Also in Cape Colony and Transvaal.

The genus *Strophanthus* contains, according to the Index Kewensis and Supplements, from 60 to 70 species, mostly from tropical Africa, but also a few in Asia and South Africa. Of these two only are found in Natal, and another in the Delagoa Bay district. Of *S. speciosus* it is said in the Flora Capensis "only one other species (*S. gratus*, Baill) having glabrous seeds is known in the genus, while *S. speciosus* is unique in having a sessile plume." One or more of the tropical African species have been known as "arrow poisons," and have been used by the natives for poisoning the tips of their arrows, it is said with very fatal effects. The seeds of the Natal species are harmless so far as known at present. The seeds of *S. Kombe* and *S. hipsidus*, or the active principle contained in them, is used in medicine with some amount of success.

Fig. 1, calyx; 2, portion of same opened; 3, corolla opened showing stamens; 4, a stamen; 5, same, back view; 6, pistil; 7, follicle; 8, seed; 9, base of petiole showing glands; *figs. 7 and 8 natural size, remainder enlarged.*

PLATE 556.

HUERNIA HYSTRIX, N. E. Brown. (Fl. Cap. Vol. 4, Sec. I., p. 911.)

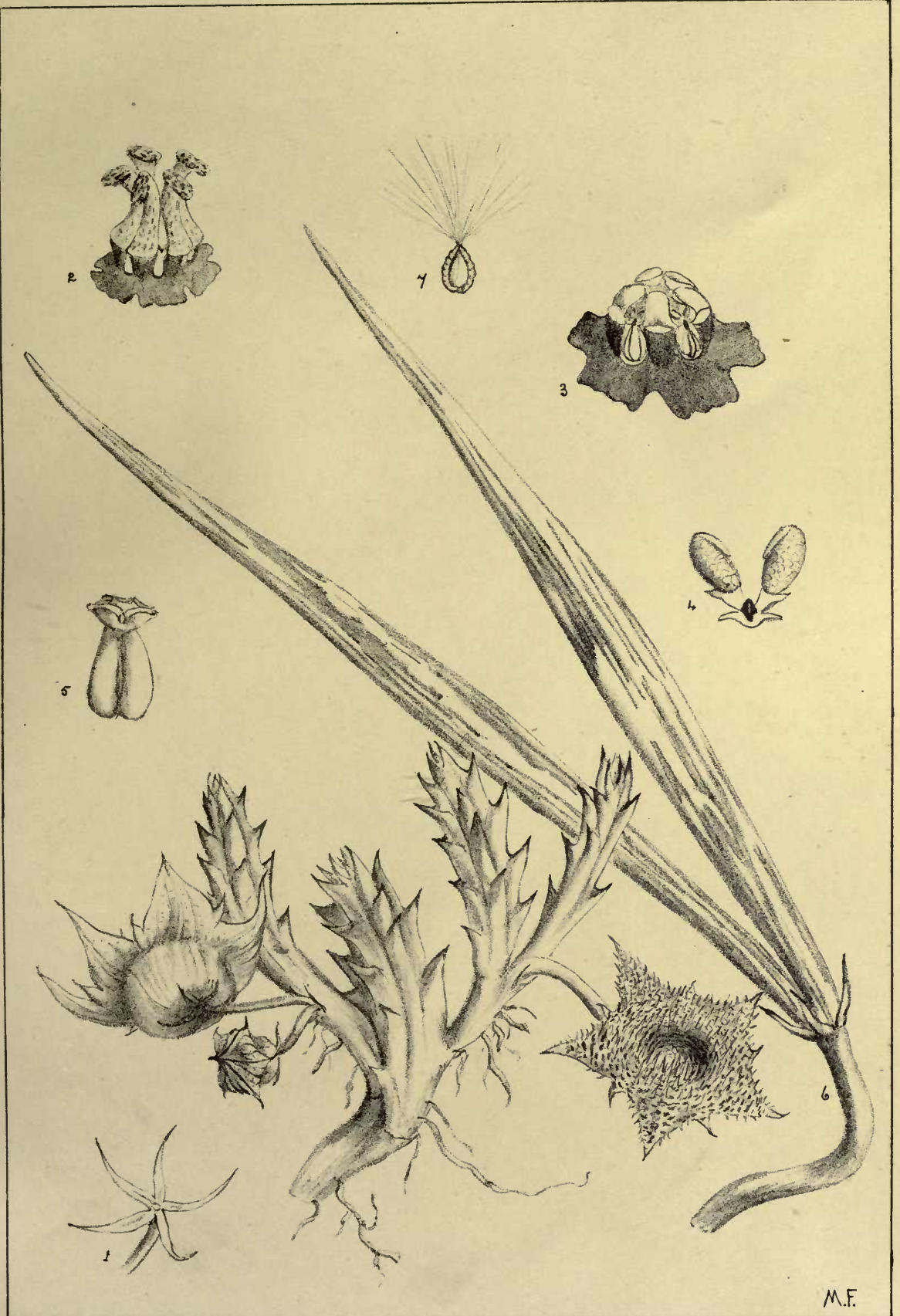
Natural Order, ASCLEPIADEÆ.

A succulent dwarf perennial. Stems 2-3 inches high, leafless, prostrate and rooting, 4-6 lines thick, 5-angled, more or less deeply furrowed between the angles, glabrous, pale green or in age dull purplish, teeth spreading at right angles to the stem or a little deflexed, very acute, broad based, 2-3 lines long. Flowers several together at or near the base of the stems, successively opening, pedicels $\frac{3}{4}$ -1 $\frac{1}{4}$ inch long, reddish, glabrous. Calyx 5-parted to base, its lobes subulate from a broad and rather rounded base, midrib prominent, glabrous. Corolla in bud pointed at apex, 5-angled, and with a small acute tooth at each angle, prominently rib-veined, the veins reddish, the spaces between them conspicuously pitted, the opened flower spreading to 15-20 lines diameter, its tube semiglobose, 5-6 lines diameter outside, with transverse chocolate lines in the inner side, lobes triangular, very acute, 3-veined, spreading horizontally, upper surface covered with spine-like, acute fleshy processes, the whole yellow thickly spotted with dark chocolate. Corona, outer lobes half as long as broad, truncate, black; inner ones 1 $\frac{1}{2}$ line long, much longer than the staminal column, linear with a transverse ridge on back below, expanded at the apex and flattened, "somewhat resembling an inverted foot," yellow chocolate dotted. "Pollen-masses attached in pairs by short triangular caudicles to lateral wing-like expansions of the pollen-carrier, sub-horizontal, pellucid at the free end just within the straight margin." Follicles in pairs, lanceolate, acuminate, 7 inches long by $\frac{1}{2}$ inch wide, pale with reddish longitudinal markings. Seeds many, oblong, 4 lines by 2 $\frac{1}{2}$ lines, including a thickened wing.

Habitat : NATAL : On a stony hill near Ladysmith, 3,200 ft. alt., *Wood* ; near Weenen, 2,000-3,000 ft. alt. *Haygarth*, (*Wood* 10813) ; near Umlaas River, 2,000 ft. alt. November, *Miss Franks* (*Wood* 11717.)

The Order Asclepiadeæ is divided into 6 Tribes, and the plant here described, together with *Stapelia gigantea* (plate 531), belongs to Tribe 6. This Tribe contains 11 genera, 3 only of which, viz. *Caralluma*, *Huernia* and *Stapelia*, are represented in Natal so far as at present known—*Caralluma* by 1 species, *Huernia* 2 species, *Stapelia* by 2 species, and a third one doubtful; the remaining South African species belonging to this Tribe number about 163, and are all natives of the drier parts of Africa. In Natal *Huernia hystrix* is probably the most common species, and *Stapelia Woodii* the rarest. Most, if not all, of the species are disagreeably scented, some so much so as to be known as "carriage flowers," and on this account are often visited by insects; the colours of the flowers are nearly always dull, but will well repay close examination, and those of the above described species are with difficulty distinguished from the soil on which they often lie.

Fig. 1, calyx; 2, corona; 3, outer corona and staminal column; 4, pollen masses; 5, pistil; 6, follicles; 7, seed; *figs. 6 and 7 natural size, remainder enlarged.*



M.F.

Huernia hystrix, N.E.B.







Ipomoea Woodii N.E.B.

PLATE 557.

IPOMOEA WOODII, N. E. B. (Fl. Cap. Vol 4, Sec. II, p. 60.)

Natural Order, CONVULVULACEÆ.

A very wide climbing plant, with large tuberous rootstock. Stems stout, woody, reaching to 20 feet or more in length, the younger portions finely pubescent, older glabrous. Leaves alternate, petiolate, orbicular cordate, up to 9 inches long and broad, quite glabrous, the young ones purplish beneath, older dark green above, lighter beneath, main veins prominent beneath, veinlets conspicuous, petiole 4-5 inches long, channelled above. Flowers axillary, in upper portions of the stem solitary, in lower portion 1-3 together, in still lower portion 3-8 together, cymosely pedunculate, pedicels of the solitary flowers $\frac{3}{4}$ -1 inch long, peduncles of the cymes $1\frac{1}{2}$ -2 inches long, pedicels $\frac{3}{4}$ -1 inch long, pedicels with two very fugitive and minute bracts $\frac{1}{4}$ inch above the base. Sepals 5, subequal, strongly imbricate, concave, the outermost slightly larger, oblong-ovate, glabrous. Corolla rosy pink, glabrous, funnel-shaped, $2\frac{1}{2}$ -3 inches long and wide, margins very indistinctly lobed. Stamens 5, inserted at base of corolla tube, shorter than the style; anthers 2-celled, dorsifixed, opening longitudinally. Ovary superior, 4-celled, cells 1-ovuled; style filiform, stigma globose, 2-lobed, capsule not seen.

Habitat : NATAL : Zululand, 2,000 ft. alt. Wood 4146; 4864.

This plant was found by the writer in a shady valley at edge of bush, the leaves forming a dense mass for several yards, the stem lying on the ground. It was quite leafless in the bush and was traced for some 6 or 8 yards to the large underground tuber, which was dug out and brought to Durban, where it flowered in the Botanic Gardens some years later. It is of rampant growth, but usually a shy flowerer. I am not aware that it has been found in any other locality but that in which it was first seen, and from whence the tubers were brought by the Curator some years later. Unfortunately no ripe capsules or seeds have been seen by us.

Fig. 1, a leaf; 2, branch with inflorescence; 3, calyx; 4, portion of corolla opened, showing stamens; 5, disk, ovary and portion of style; 6, style and stigma; 7, cross section of ovary; 8, pollen grain; *figs. 1 and 2 natural size, remainder enlarged.*

PLATE 558.

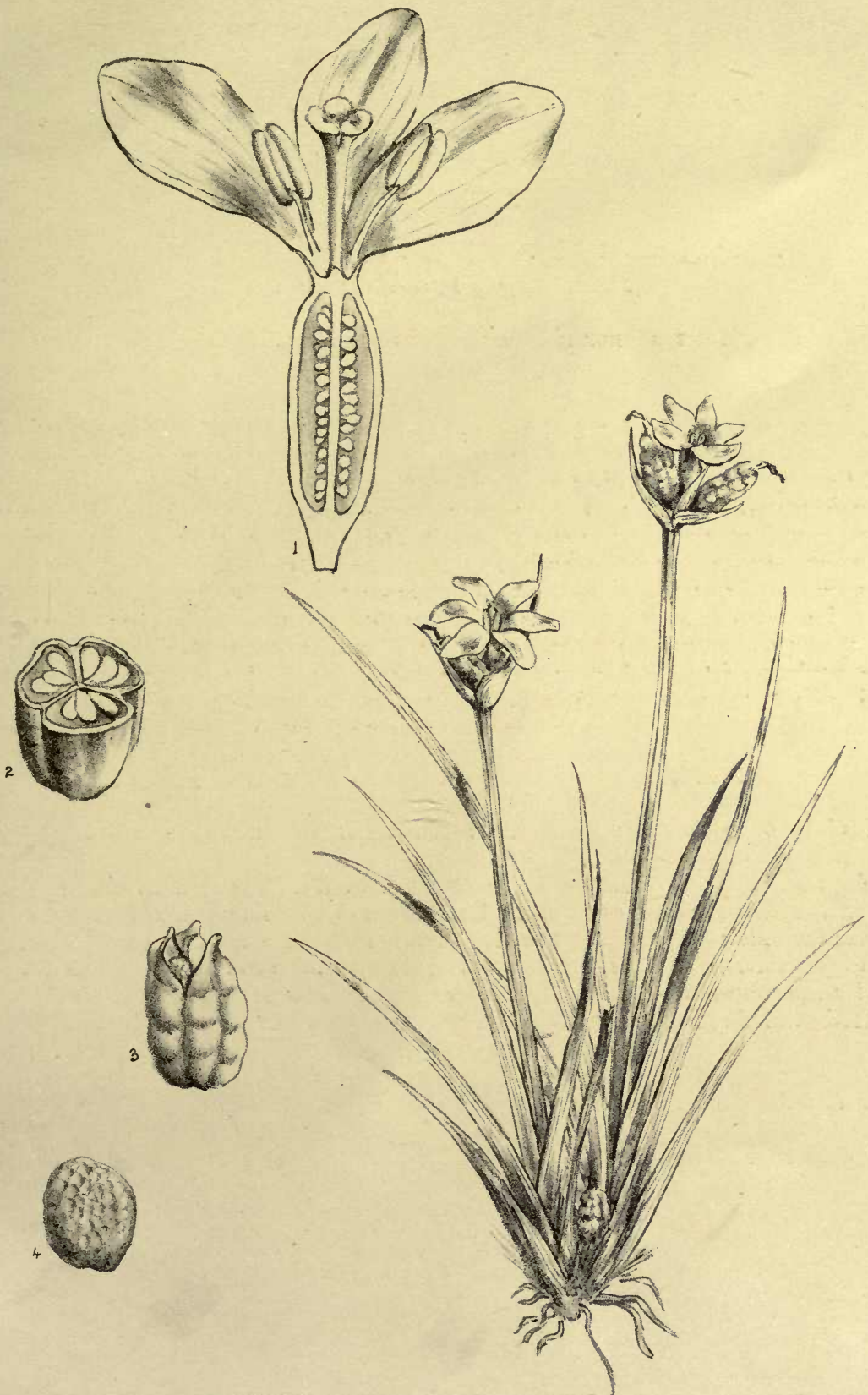
ARISTEA ANCEPS, Ecklon. (Fl. Cap. Vol. 6, p. 49.)
Natural Order, IRIDEE.

A small plant with terminal clusters of blue flowers. Roots fibrous, slender, wiry. Leaves distichous, basal, linear, erect, glabrous, quite entire, 2 to 8 inches long, 1 to $1\frac{1}{2}$ lines wide. Stems simple, erect, 5 to 12 inches long, strongly anapitous for their whole length. Inflorescence in terminal clusters, the clusters few flowered, each cluster suspended by a rigid, linear bract, which is frequently much longer than the cluster of flowers; inner spathe-valves membranous, lanceolate, brown, entire, 4 to 6 lines long. Perianth segments 6, in two rows, oblong, entire, dark bright blue, 4 lines long. Stamens inserted at throat of perianth tube, anthers 2-celled, opening outwards, filaments equalling or a little longer than the anthers. Style about half as long as the perianth limb; stigma 3-lobed, the lobes horizontally flattened, stigmatose on the margins. Ovary inferior, 3-celled, the cells many ovuled. Capsule oblong, sessile or nearly so, more or less torulose, 4 lines long. Seeds small, more or less angled by pressure.

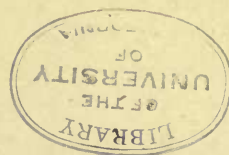
Habitat: NATAL: Inanda, 1,800 ft. alt. December, Wood 735; Sanderson 339; 386; 457; Cooper 3214; Camperdown 2,000 ft. alt., M. Franks, (Wood 11742.)

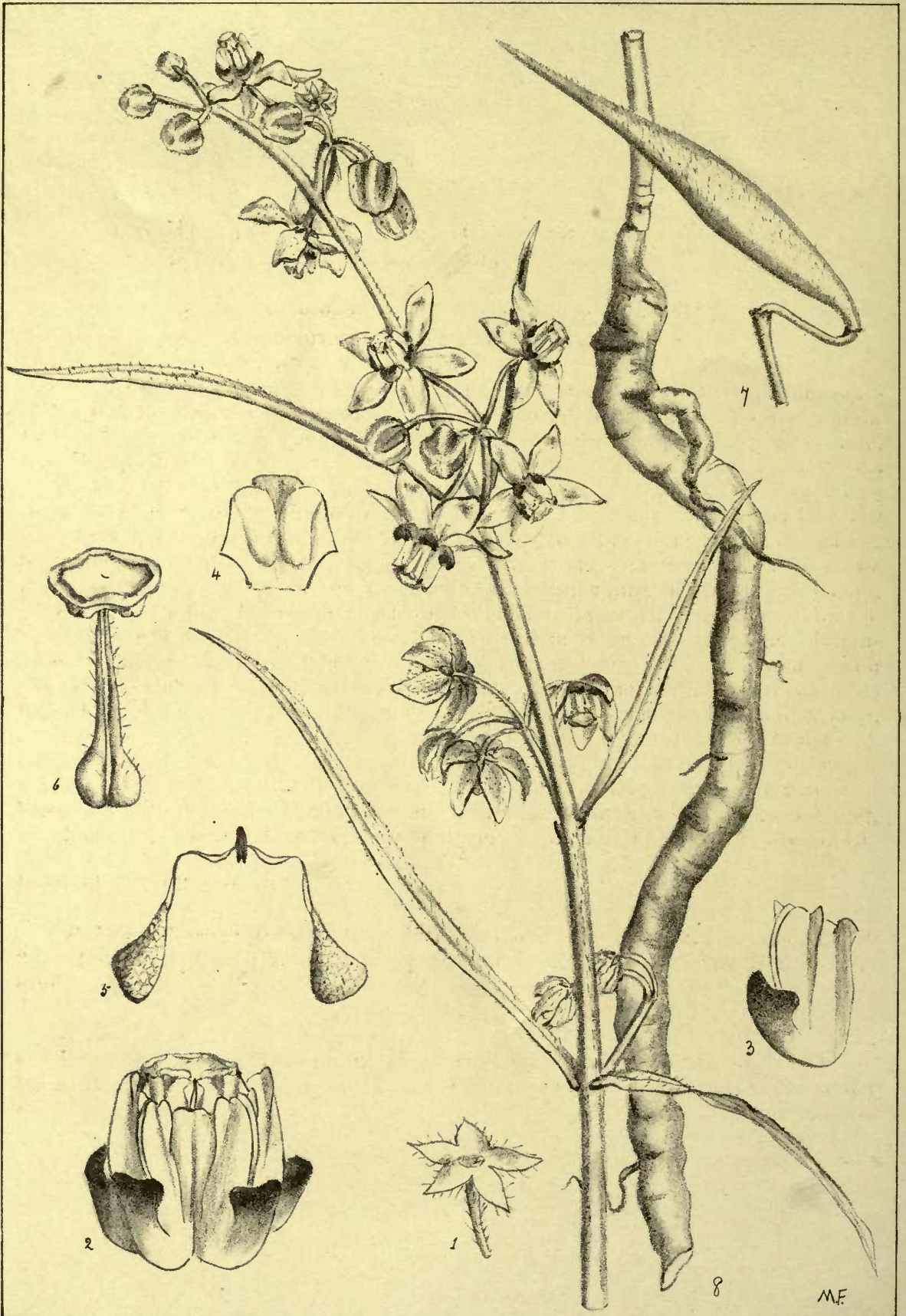
One species of this genus, *A. Eckloni*, has already been figured in this work, Vol. 1, plate 68. The species here described is a much smaller plant, with an unbranched stem and a solitary cluster of flowers. It is not uncommon on grassy hills from near Durban to at least 3,000 feet above sea level, and so far as known to us it has no useful properties.

Fig. 1, longitudinal section of flower; 2, cross section of ovary; 3, capsule; 4, seed; all enlarged.



Arislea anceps, Ecklon.





Asclepias peltigera Schltr

PLATE 559.

ASCLEPIAS PELTIGERA, Schltr. (Fl. Cap. Vol. 4, Section 1, p. 674.)

Natural Order, ASCLEPIADEÆ.

Rootstock, much elongated, reaching to 18 inches below the surface of the ground. Stem simple, solitary, 1 to 3 feet high, puberulous above, glabrous below, internodes 1 to $2\frac{1}{2}$ inches long. Leaves 2 to $4\frac{1}{2}$ inches long, subsessile, $\frac{3}{4}$ to 2 lines broad, linear, acute, truncate at base, widely spreading or curved upwards, or occasionally reflexed, scabrous above and on the midrib below. Inflorescence umbellate, umbels 2-5, axillary and terminal, sometimes terminal only, 2-6 flowered; peduncles $\frac{1}{2}$ to 1 inch long, puberulous like the pedicels which are $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Sepals $1\frac{1}{2}$ - $1\frac{3}{4}$ line long, $\frac{2}{3}$ to $\frac{3}{4}$ line broad, ovate-lanceolate, acute, pubescent. Corolla 5-lobed, lobes 4 to $4\frac{1}{2}$ lines long, $2\frac{1}{2}$ to 3 lines broad, elliptic or elliptic-oblong, with a very minute notch at apex, spreading, pubescent beneath, glabrous above, dull greenish white on inner surface, dull maroon on outer surface. "Corona-lobes arising at base of the staminal column shorter and adnate to it, 2 to $2\frac{1}{2}$ lines high, oblong in side view, dorsally divided to the base, from which arises an erect lobe shaped like a fish tail and reaching to about half-way up," fleshy in fresh specimens, the whole lobe bluish purple; "staminal column $2\frac{3}{4}$ to 3 lines long; anther appendages half-orbicular, obtuse, inflexed over the margin of the slightly depressed very light green" style apex. Follicles fusiform, $2\frac{3}{4}$ inches by 4 lines in the thickest part pubescent.

Habitat: NATAL. Near Oakford, Inanda district, under 1,000 ft. alt. Wood 362, November 1878; Umzumbi 1-200 ft. alt. April, 1884, (*Wood in Government Herbarium* 879) near Verulam, J. S. Martindale, November, 1910.

A slender herbaceous perennial bearing rather pretty flowers; it was until lately known as *Gomphocarpus peltigerus*, Dietr. and was figured in Harvey's "Thesaurus Capensis," which was published in 1859 as *Gomphocarpus truncatus*, Dcne., where the colour of the flowers is said to be "purple or raspberry and cream." It would seem in Natal to be a rather rare species, but is more plentiful in the Cape Colony, and probably in the Transvaal colony also.

Fig. 1, calyx; 2, corona and staminal column; 3, corona lobe; 4, anther; 5, pollen masses; 6, pistil; 7, follicle; 8, tuber; figs. 7 & 8 nat. size, remainder enlarged.

PLATES 560 & 561.

SIPHONCHILUS. J. M. Wood & M. Franks, gen. nov.

Characters of *Kaempferia*, except flowers polygamous, monoecious. Hermaphrodite flowers of *Kaempferia*. Female flowers; staminodes connate in a long narrow tube, which is 4-6 lobed. Stamen O. Flowers pedunculate or very shortly racemose, peduncles, and ovary subterranean.

SIPHONCHILUS NATALENSIS, Wood & Franks, nov. sp.

Natural Order, SCITAMINEÆ.

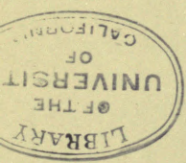
A perennial herb with showy polygamous, monoecious flowers. Rhizome subglobose, 2-3 inches diameter, aromatic, roots filiform. Leafy stem 1 to 3 feet high. Leaves 5 to 10 or more, their petioles sheathed into a false stem, blades lanceolate, the middle ones largest, 12 to 14 inches long, 3 to $3\frac{1}{2}$ inches broad, the lowest 3 inches long, $\frac{3}{4}$ inch broad, midrib prominent beneath. Flowers 3-6, proceeding from the rhizome, pedunculate, solitary or very shortly racemose, bracteate at the base, bracts oblong, obtuse, 9 to 14 inches long, 3 to 7 lines broad, pedicels 5 to 12 lines long; peduncles, bracts, pedicels and ovary subterranean. *Hermaphrodite flowers.* Calyx tubular, tridentate, membranaceous, white, 12 to 13 lines long, slit on one side for the upper third. Corolla tube 9 to 12 lines long, lobes 3, lanceolate, acuminate, $2\frac{1}{4}$ inches long, 7 lines broad, membranaceous, white. Stamino-odes petaloid, pink, large, labellum bifid, $2\frac{1}{4}$ inches long and broad, connate in a slit tube $2\frac{1}{2}$ inches long with the two erect lateral staminodes which are 2 inches long, $1\frac{1}{2}$ inch broad. Stamen 2 inches long. Anther linear, 2-celled, 6 lines long, connective produced in a dentate crest, 9 to 14 lines long, 4 to 5 lines broad. Ovary 3-celled, cells many ovuled, style filiform, stigma produced beyond the anther cells, crateriform, 3-lobed at apex. *Female flowers.* Calyx and corolla of hermaphrodite flowers, staminodes connate in a long cylindrical tube 3 inches long, segments 4 to 6 unequal, 2-3 oblong, obtuse, $1\frac{3}{4}$ inch long, 7-9 lines broad, the alternate 2-3, narrower, $1\frac{3}{4}$ inch long, 3 to 4 lines broad. Stamen O. Pistil of hermaphrodite flower.

Habitat: NATAL: Inanda, 1,800 ft. alt. Wood 544. 'Ngoya, Zululand, 2,000-3,000 ft. alt, Wylie. Wood 11723. Flowered in Botanic Gardens, Durban, December, 1910.

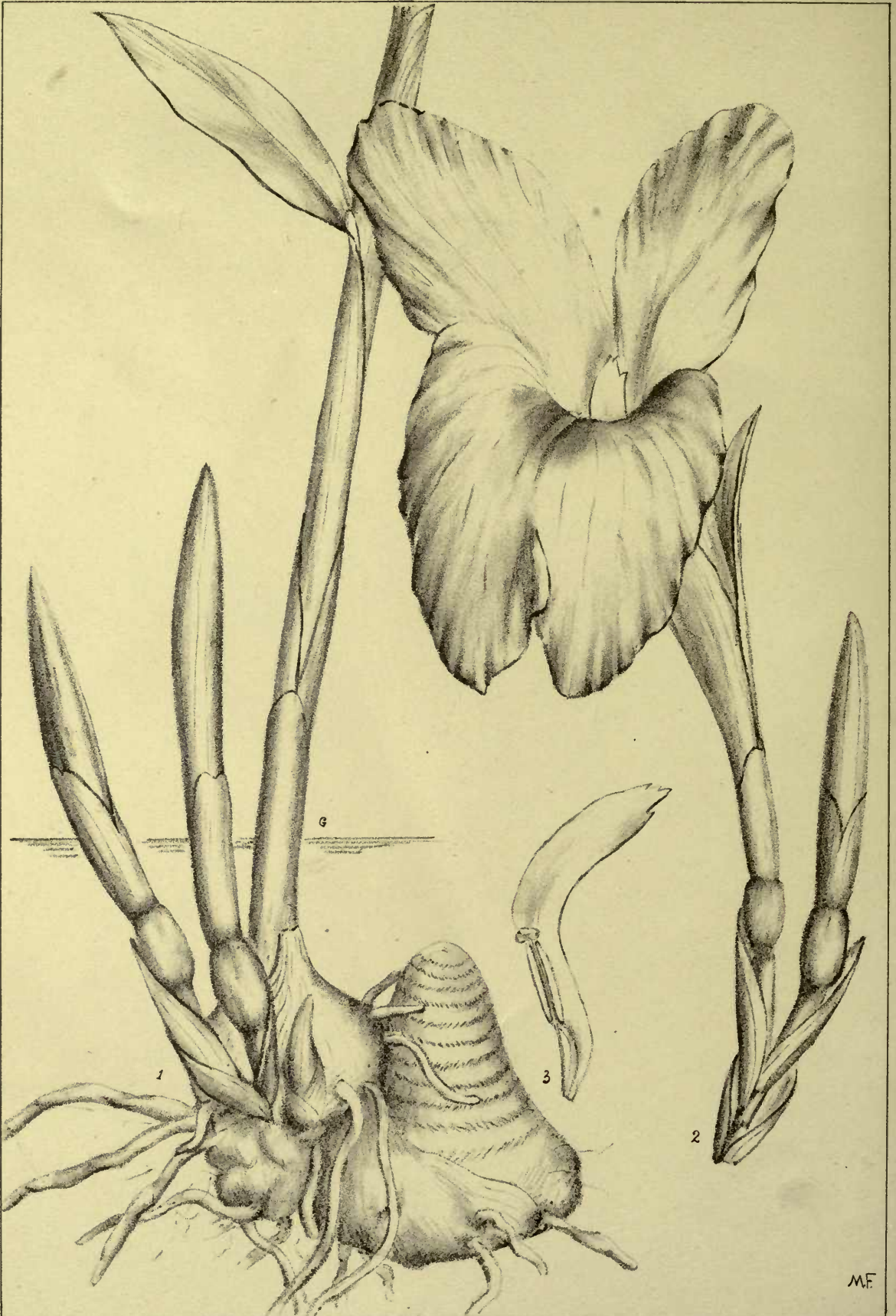
This genus differs from *Kaempferia* by its polygamous flowers, and from all species of *Kaempferia* known to us, *K. Ethelæ* only excepted, by the ovaries being below the surface of the ground. A large number of the plants have been under our observation during the flowering season, but very few hermaphrodite flowers have been noted, the female flowers largely outnumbering them, and in no case, so far as we have been able to find, have seeds been produced, the ovaries rotting in the ground, though the flowers are visited by a minute "Mucid fly," the name of which we have not been able to ascertain. The tube of the female flowers is very



Siphonochilus natalensis J.M.Wood & M.Franks







Siphonochilus natalensis Wood & Franks.

narrow and long, so that fertilisation can only be effected by a minute insect, and the flowers only remain open for half the day, being completely closed before the evening. The late W. T. Gerrard, who first collected the plant, noted that the flowers were unisexual, and it was afterwards named *Kaempferia natalensis*, by Schlechter & Schum, and they said that if male flowers had been found they proposed to "give it the dignity of a new genus," for which they suggested the name *Siphonochilus*. That name we have therefore retained, though no male flowers have been seen, female and hermaphrodite only.

Plate 560. Fig. 1, buds and bracts; 2, female flower; 3, leafy stem; 4, calyx; 5, corolla; 6, style and stigma; 7, cross section of ovary; *figs. 6 & 7 enlarged, remainder natural size.*

Plate 561. Fig. 1, Rhizome, with buds and base of leafy stem; 2, raceme with perfect flower; 3, stamen; *all natural size.*

PLATE 562.

CALODENDRON CAPENSE, Thunb. (Fl. Cap. Vol 1, p. 371.)

Natural Order, *RUTACEÆ*.

A large and handsome tree, 20 to 30 feet high, with trunk 2 to 3 feet in diameter. Branches and branchlets usually opposite, sometimes in threes, bark brown, lenticillate, terete. Leaves dark green, opposite, decussate, petiolate, exstipulate, oblong to broadly ovate, acute, obtuse or retuse, tapering at base to the short petiole, midvein prominent beneath, lateral veins 20 or more on each side, parallel, conspicuous; pellucid dotted, but not conspicuously so, reaching to 6 inches long by 4 inches wide, petiole $\frac{3}{4}$ inch swollen. Inflorescence terminal on the branches, paniculate. Calyx small, 5-parted, lobes oblong, acute, $1\frac{1}{2}$ line long. Petals 5, very narrowly oblong, spreading, $1\frac{1}{4}$ inch long by 2-3 lines wide, very minutely stellato-pubescent on outer surface; light pink with deep crimson blotch on inner surface at base. Stamens 10, inserted on the margin of a short cup-shaped disk, 5 fertile alternating with 5 barren ones (staminodes), filaments of the fertile stamens filiform, a little shorter than the petals, anthers oblong, 2-celled, $1\frac{1}{2}$ line long; staminodes petaloid exceeding the petals in length, varying from 1 to 3 lines in breadth, all acuminate, light to darker pink and studded with crimson glands. Ovary superior, stipitate, 5-celled, cells 2-ovuled. Fruit a 5-celled capsule, septidally opening, the valves thickly tuberculate; at maturity $1\frac{1}{2}$ inch long and wide. Seeds black and shining, 8 lines long.

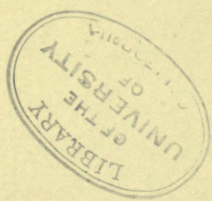
Habitat: NATAL: Inanda, 1,800 ft. alt. *Wood* 10. Not uncommon in coast and midland districts.

A very handsome tree, especially when in flower, as its large panicles of flowers make it a very conspicuous object. It is known in Cape Colony as "Wilde Kastanier," and is sometimes cultivated. The wood, according to Fourca e, is "used for yokes, and suitable for planking, and, if prepared, for railway sleepers." In Natal it is known to the natives as um-Baba, but the wood is not used so far as known to us. The seeds yield a limpid oil, but not in large quantity.

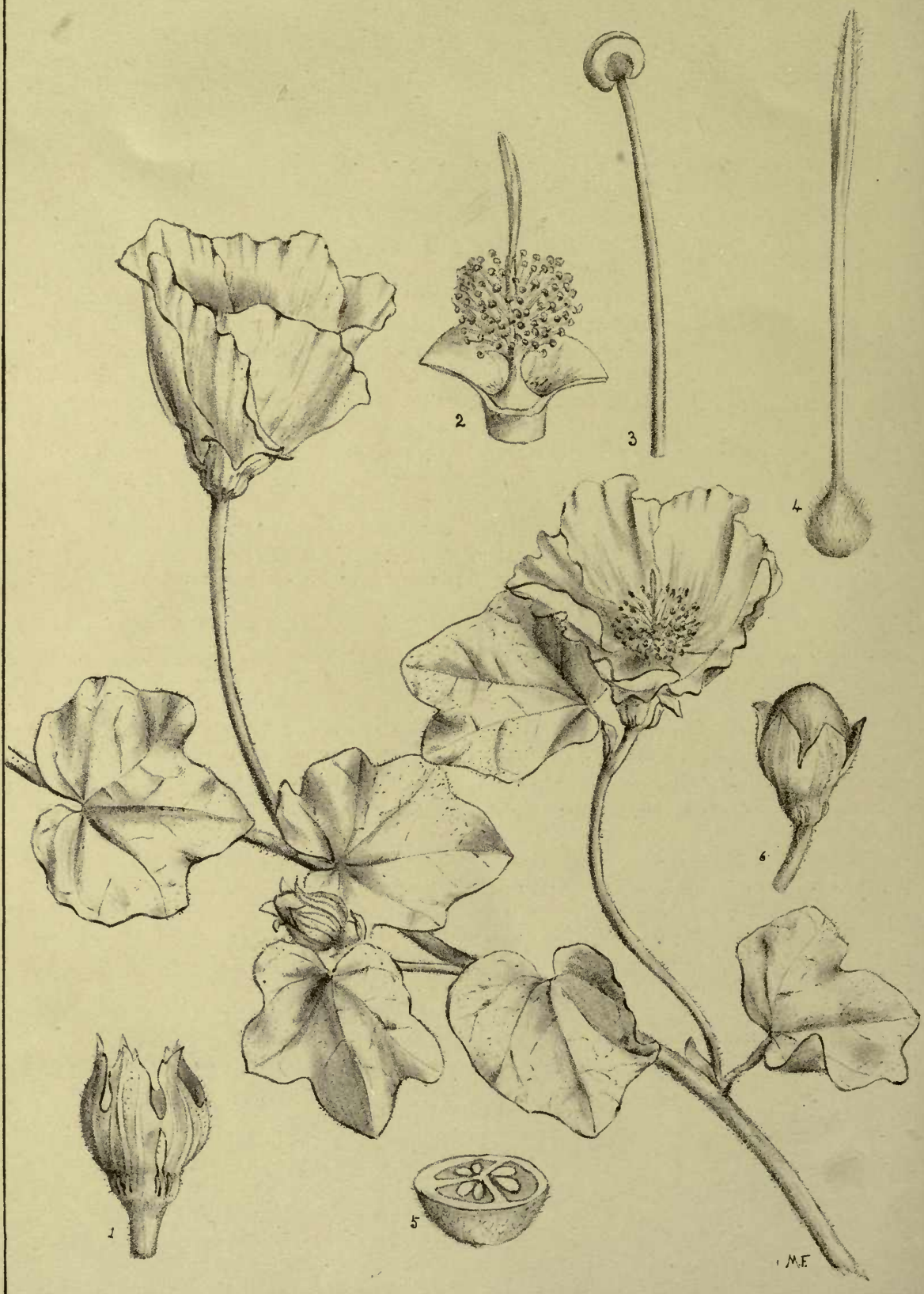
Fig. 1, calyx and pistil; 2, disk and pistil; 3, cross section of ovary; 4, stamen; 5, capsule; 6, leaf; *figs. 5 & 6 natural size, remainder enlarged.*



Calodendron capense Thb.







Fugosia Gerrardi, Harv.

PLATE 563.

FUGOSIA GERRARDI, Harv. (Fl. Cap. Vol. 2, p. 587.)

Natural Order, MALVACEÆ.

A diffuse decumbent branching undershrub. Stems and branches terete, dark coloured, minutely and densely stellate pubescent. Leaves simple, alternate, stipulate, petiolate, varying from broadly ovate to reniform, $\frac{3}{4}$ to $1\frac{1}{2}$ inch long and wide, 3-5 veined, more or less stellate pubescent on both surfaces, more densely so on the veins beneath, bluntly or indistinctly 3-lobed, occasionally the lobes of the lowest leaves 3-angled; petioles $\frac{1}{2}$ to 1 inch long; stipules leafy, oblong, tapering at base, with midrib and lateral veins ciliate with longish hairs, and stellate pubescent like the leaves. Flowers axillary, solitary, on slender peduncles which reach to $1\frac{3}{4}$ inch in length. Involucel of 3 lobes, which are deeply 3-cleft, the centre tooth usually the longest. Calyx campanulate, 5-lobed, the lobes oblong-deltoid, the interspaces rounded, the whole calyx $\frac{1}{2}$ inch long. Corolla of 5 petals $1\frac{1}{4}$ inch long, $1-1\frac{1}{4}$ inch broad, attached to base of the staminal column, twisted in aestivation, yellow, finely pubescent on outer and exposed surface, minutely gland dotted. Stamens united in a column, which is 5-lobed at apex, antheriferous in upper portion; anthers 1-celled; ovary 3-celled, many ovuled; capsule coriaceous, dehiscing loculicidally, 7-9 lines long; ripe seeds not seen.

Habitat: NATAL. On dry plains near Ladysmith, 3,000-4,000 ft. alt., *Gerrard* 632; Camperdown, 2,000 ft. alt. *Haygarth* in Colonial Herbarium 1469; *Pieters*, 3,000-4,000 ft. alt., November. *Wood* in Colonial Herbarium 8772; Camperdown, 2,000 ft. alt. October, *Miss Franks*.

The genus *Fugosia* contains about 20 species, of which 3 are in tropical and south Africa, the remainder in central and south America and Australia; all of them are shrubs or undershrubs, with the aspect of *Hibiscus*, to which genus they are nearly related. *F. Gerrardi* is not uncommon in Natal, *F. triphylla* has been found in Damaraland, and *F. digitata* in tropical Africa. None of the species have any economic or medicinal value so far as known to us.

Fig. 1, calyx; 2, staminal column, style, and base of petals; 3, a stamen; 4, pistil; 5, cross section of ovary; 6, capsule; fig. 6 *natural size, remainder enlarged*.

PLATE 564.

HERMANNIA GRANDISTIPULA, K. Schum. (Fl. Cap. Vol. 1, p. 209, sub Mahernia.)
Natural Order, STERCULIACEÆ.

A small undershrub with yellow flowers. Root woody. Stems several, erect, occasionally branched near the base, terete, densely clothed with long white stellate hairs, 6-12 inches high. Leaves alternate, subsessile, stipulate, oblong to linear-oblong, obtuse, margins toothed or sometimes subentire, pubescent with scattered stellate hairs on the veins and very sparsely so on the surfaces, ciliate with similar hairs; stipules leafy, irregularly lobed, the lobes or segments varying much in number and size, and furnished with hairs similar to those of the leaves. Inflorescence in upper portion of the stem, on short 2-flowered peduncles, bracts similar to the stipules, but smaller. Calyx globose, inflated, 5-toothed, densely clothed with long white, stellate hairs. Corolla of 5, oblong, obtuse, petals which are equal to or exceed the calyx in length; pubescent, yellow. Stamens 5, filaments cruciform, caused by a thick hairy transverse tubercle above the middle, the upper portion filiform; anthers lanceolate-acuminate, 2-celled, dorsifixed. Ovary 5-celled, 5-angled, ovate, pubescent, enclosed in the inflated calyx; ripe seeds not seen.

Habitat: NATAL. *Krauss* 175; *Sanderson*; Upper Umlaas, 2,000 ft. alt. *Haygarth* in the Colonial Herbarium 1467; Camperdown, 2,000 ft. alt., *Miss Franks*, February.

Of the genus *Hermannia* three species have already been figured and described in this work, viz., *H. Sandersoni*, plate 20, vol. 1; *H. Gerradi*, plate 264, vol 3; and *H. malvaefolia*, plate 361, vol. 4. These three plants are all true *Hermannias*, while *H. grandistipula* belongs to the Section *Mahernia*. The word *Mahernia* is an anagram of *Hermannia*, and was proposed as a different genus, and appears as such in the *Flora Capensis*, the difference between the two genera being that in *Mahernia* the filaments are cruciform, while in *Hermannia* they are oblong, flat or obovate, but not cruciform. It has now been decided to abolish *Mahernia* as a genus, leaving it only as a Section of *Hermannia*, which is an older genus, all members of this Section so far as at present known being natives of South Africa. Some species of the genus bear rather pretty flowers, but none have any special or economic value.

Fig. 1, a flower; 2, petal; 3, stamens and pistil; 4, a stamen; 5, pistil; 6, cross section of ovary; *all enlarged*.



ME

Hermannia grandistipula, K. Schum.





Gardenia Gerrardiana, Sond & Harv.

PLATE 565.

GARDENIA GERRADIANA, Sond & Harv. (Fl. Cap. Vol. 3, p. 6.)

Natural Order, RUBIACEÆ.

A tall several stemmed shrub, armed with sharp spines, the stems up to 12 feet or more long, suberect or horizontally spreading, sometimes branched from the base, the ultimate branches very short, at right angles to the stem or branch and with greyish bark. Spines $\frac{1}{4}$ to $\frac{1}{2}$ inch long. Leaves oblong, oblong-lanceolate, lanceolate or ob-lanceolate, petiolate, stipulate, acute or sub-obtuse, tapering to base, margins entire, quite glabrous and shining, paler beneath, 1 to $3\frac{1}{2}$ inches long, 4 to 16 lines wide; petiole 1 to 3 lines long; stipules subulate, 2 lines long. Flowers solitary, axillary on the short leafy branches, Calyx tubular, cylindric, 5-toothed, the teeth deltoid, acute, minutely ciliate, 1 line long; tube 4 lines long, 2 lines wide, a little constricted above the ovary, green, glabrous. Corolla salver-shaped, in bud the limb pink, the tube green, at maturity the whole flower white with faint pink tinge beneath, tube cylindrical, widening in upper portion, $1\frac{1}{3}$ inch long, 3 lines wide at throat, segments oblong $1\frac{1}{4}$ to $1\frac{1}{2}$ inch long, $\frac{1}{2}$ inch wide, entire, obtuse. Stamens 5, at throat, included, anthers linear, sessile, 2-celled, dorsifixed. Ovary inferior, 1-celled; style long, slender, stigma clavate, minutely bifid, exserted. Young berry ovate, $\frac{3}{4}$ inch long, crowned with the $\frac{1}{4}$ inch long tube of the calyx, ripe fruit not seen.

Habitat: NATAL. Near Durban, *Gerrard & McKen* 715; Stella bush, near Durban, 200 to 400 ft. alt. January, *Wood* 11797.

Of this genus three species have already been figured in this work, viz., *G. citriodora* and *G. Thunbergia* in vol. 1, pl. 25 & 40, and *G. globosa* in vol. 4, p. 376, but the species here described differs in several important respects from any of them. It is a shrub with very long straggling branches, and is armed with sharp thorns or spines; the flowers are, however, conspicuous and handsome, and the plant is well worth cultivation. I have no information of its being collected in any other locality than those given above, nor have I any record of its being introduced into cultivation.

Fig. 1, calyx; 2, corolla tube opened showing stamens; 3, a stamen; 4, style and stigma; 5, cross section of ovary; 6, berry; *figs. 2 & 6 natural size, remainder enlarged.*

PLATE 566.

TELOSMA AFRICANA, N. E. B. (Fl. Cap. Vol. 4, Sect. I, p. 776.)

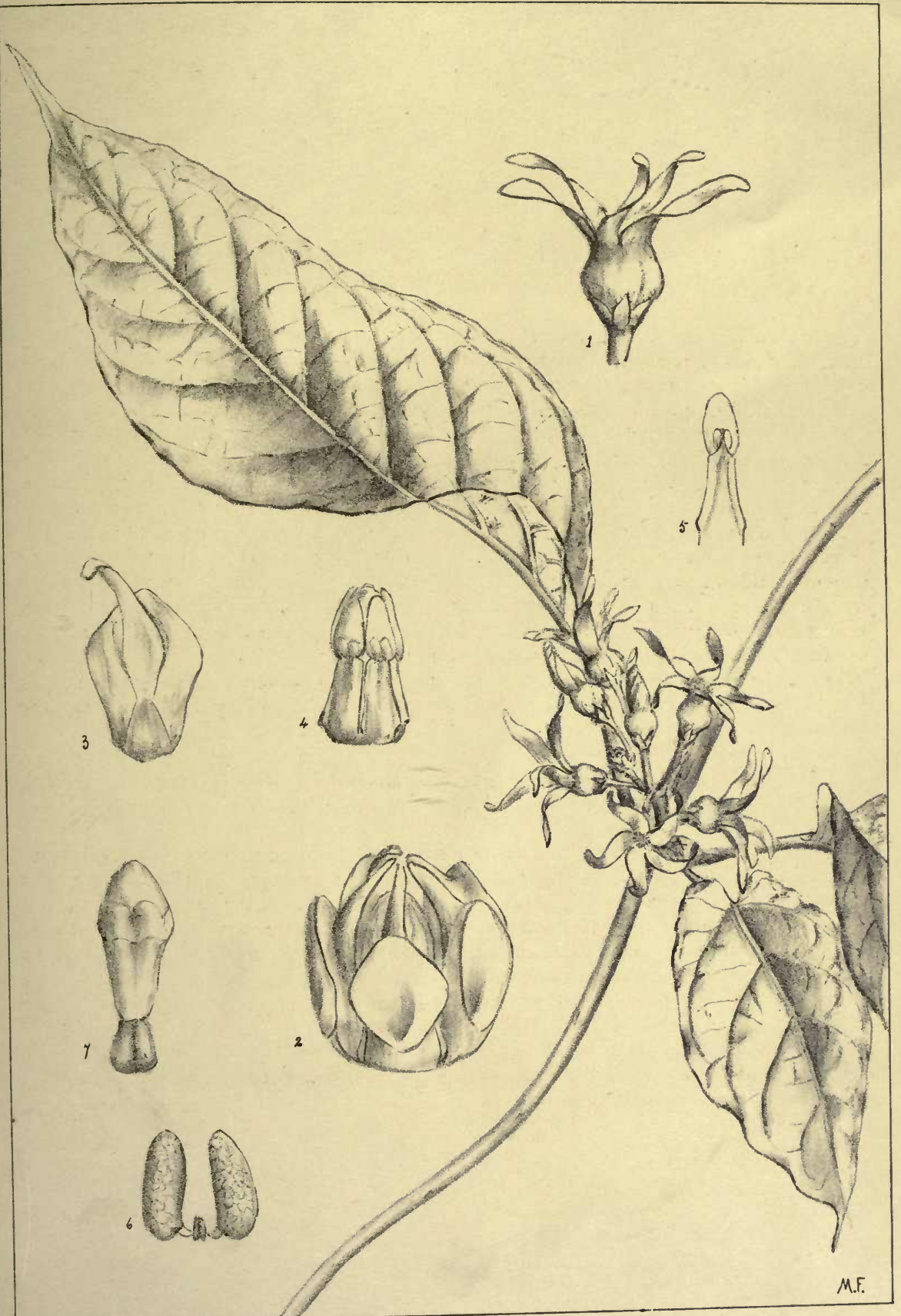
Natural Order, ASCLEPIADEÆ.

A climbing plant with green flowers. Stems glabrous, terete, 10 feet or more long, sparingly branched. Leaves opposite, petiolate, blade $1\frac{1}{4}$ to 7 inches long, 1 to 4 inches broad, oblong-ovate to broadly ovate, acuminate and shortly cuspidate, acute or obtuse, more or less gradually tapering to base, quite glabrous, dark green and shining above, duller beneath; petiole $\frac{1}{2}$ to 1 inch long. Inflorescence sub-corymbose, peduncles very short, pedicels 3 to 4 lines long. Sepals $1\frac{1}{2}$ to 2 lines long, up to 1 line broad, acuminate from a broad base, minutely ciliate, glabrous. Corolla gamopetalous, tube $\frac{1}{4}$ inch long, sub-globose, constricted in upper portion, glabrous externally, reddish brown, densely hairy at throat, with 5 minute tufts of hairs at base alternating with the lobes; lobes 5, horizontally spreading, linear attenuate, light green, twisted to the right, having a line of hairs in the centre at base, which gradually disappears upwards. Corona 5-lobed, lobes arising from base of the staminal column, erect, 1 to $1\frac{3}{4}$ line long, broadly obovate, rounded, truncate at apex, with a linear-oblong appendage 1 line long from about the middle of the inner face, which is connivent over the staminal column; anther appendages $\frac{3}{4}$ to 1 line long, ovate-lanceolate, connivent over the obtuse style apex. Follicles not seen.

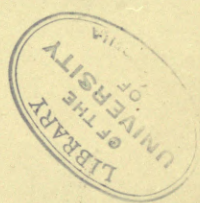
Habitat: NATAL. Berea, near Durban, *McKen* 2; 1996; Berea, 150 ft. alt., December-March, *Wood* 3395, 5147, 6591; Tugela Valley, *Gerrard* 1804.

This plant was formerly known as *Pergularia africana*, which was admittedly a mistake; it has now been published under the above name. *Telosma* is a genus containing but few species, "mostly Indian and Malayan," the one here described being the only South African species so far as at present known. In Natal it has so far only been found in the coast districts and is not common, but it is also said to be a native of Tropical Africa. It is a wide climbing plant, whose corollas are reddish brown on the lower and light green on the upper surface, and it is of no economic value.

Fig. 1, a flower; 2, corona; 3, corona lobe; 4, staminal column; 5, a stamen; 6, pollen-masses; 7, pistil; *all enlarged*.



Telosma africana, N.E.B.





Geranium ornithopodium, E. & Z.

PLATE 567.

GERANIUM ORNITHOPODUM, E. & Z. (Fl. Cap. Vol. 1, p. 258.)

Natural Order, GERANIACEÆ.

A suberect much branched undershrub, the branches slender, striate, densely villous with white hairs. Leaves opposite, petiolate, stipulate, deeply and palmately 5-lobed, the lobes irregularly cut into cuneate acute segments, dark green and pubescent with white hairs on upper surface, pale and villous on veins and veinlets beneath, $1\frac{1}{2}$ to $2\frac{1}{2}$ inches long and wide in general outline; petioles slender, $1\frac{1}{2}$ to $3\frac{1}{2}$ inches long, villous; stipules lacerate to base. Peduncles axillary and terminal, two flowered. Calyx of 5 sepals, which are oblong, mucronate, pilose with gland-tipped hairs, 5-veined, 4 lines long, $1\frac{1}{4}$ line wide. Stamens 10, perfect, subequal, filaments subulate, hypogynous; petals 5, hypogynous, imbricate, alternating with 5 glands. Ovary 5-lobed, 5-celled, 5-beaked, pilose; styles 5, stigmatose longitudinally. Carpels 5, 1 ovuled, cohering round a beak-like torus to which the styles adhere.

Habitat: NATAL. Inanda, 1,800 ft. alt. April, *Wood* 85; Tweedie, 3,000 to 4,000 ft. alt., *Wood* 11035; Camperdown, 2,000 ft. alt., *Miss Franks*. Not uncommon in the midlands.

A slender shrublet, either prostrate or sub-erect and much branched. The flowers are pink and rather pretty, but the plant is scarcely worth cultivation, and is not used in any way as far as known to us.

Fig. 1, calyx; 2, a petal; 3, stamens and pistil; 4, pistil; 5, same at maturity; 6, cross section of ovary; *all enlarged*.

PLATE 568.

GALTONIA CANDICANS, Dcne. (Fl. Cap. Vol. 6, p. 451.)

Natural Order, LILIACEÆ.

Bulb globose, tunicated. Leaves 4-6, lanceolate, fleshy, light green, 2-3 feet long, 1-2 inches broad, quite entire. Peduncle stout, terete, $3\frac{1}{2}$ to $4\frac{1}{2}$ feet long; raceme lax, 6 to 12 inches long, 15 to 35 flowered, pedicels cernuus, 1 to $2\frac{1}{2}$ inches long; bracts, lower ones oblong acuminate, $1\frac{3}{4}$ inch long, $\frac{1}{2}$ inch wide, upper ones lanceolate and smaller. Perianth $1-1\frac{3}{4}$ inch long, tube oblong, green at base, gradually becoming white above, segments 6, a little longer than the tube, three being oblong and minutely thickened at apex, the alternate ones broadly oblanceolate, a little wider and not thickened at the apex. Stamens 6, inserted on the tube a little below the throat, filaments subulate, 8-9 lines long; anthers oblong, dorsifixed, dehiscent introrsely. Ovary sessile, oblong, trigonous, 3-celled, many ovuled. Capsule not seen.

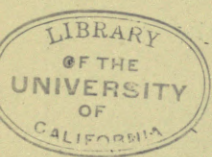
Habitat: NATAL. Drakensberg, 6,000-7,000 ft. alt., *Evans* 360; sources of Tugela River, *McKen* 5; *Allison*; Oliver's Hoek Pass, 5,000 ft. alt., *Wood*, January. Also on the Witte Bergen, Cape Colony, 7,000 to 8,000 ft. alt., *Drege*.

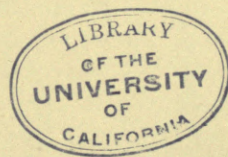
The genus *Galtonia* is confined to South Africa, and includes 3 species only, viz., *G. princeps*, which is closely related to the one here described, but smaller and not so ornamental, *G. clavata*, which so far is only known in cultivation; it is a native of S. Africa, but the precise locality where it was collected is unknown to us. The genus is named after the late Francis Galton, F.R.S., the traveller and author. *G. candicans* is not uncommon on the Drakensberg mountains, where in some localities it is found in profusion. It is a highly ornamental species, and was introduced into Europe many years ago, *G. clavata* having been introduced in 1881.

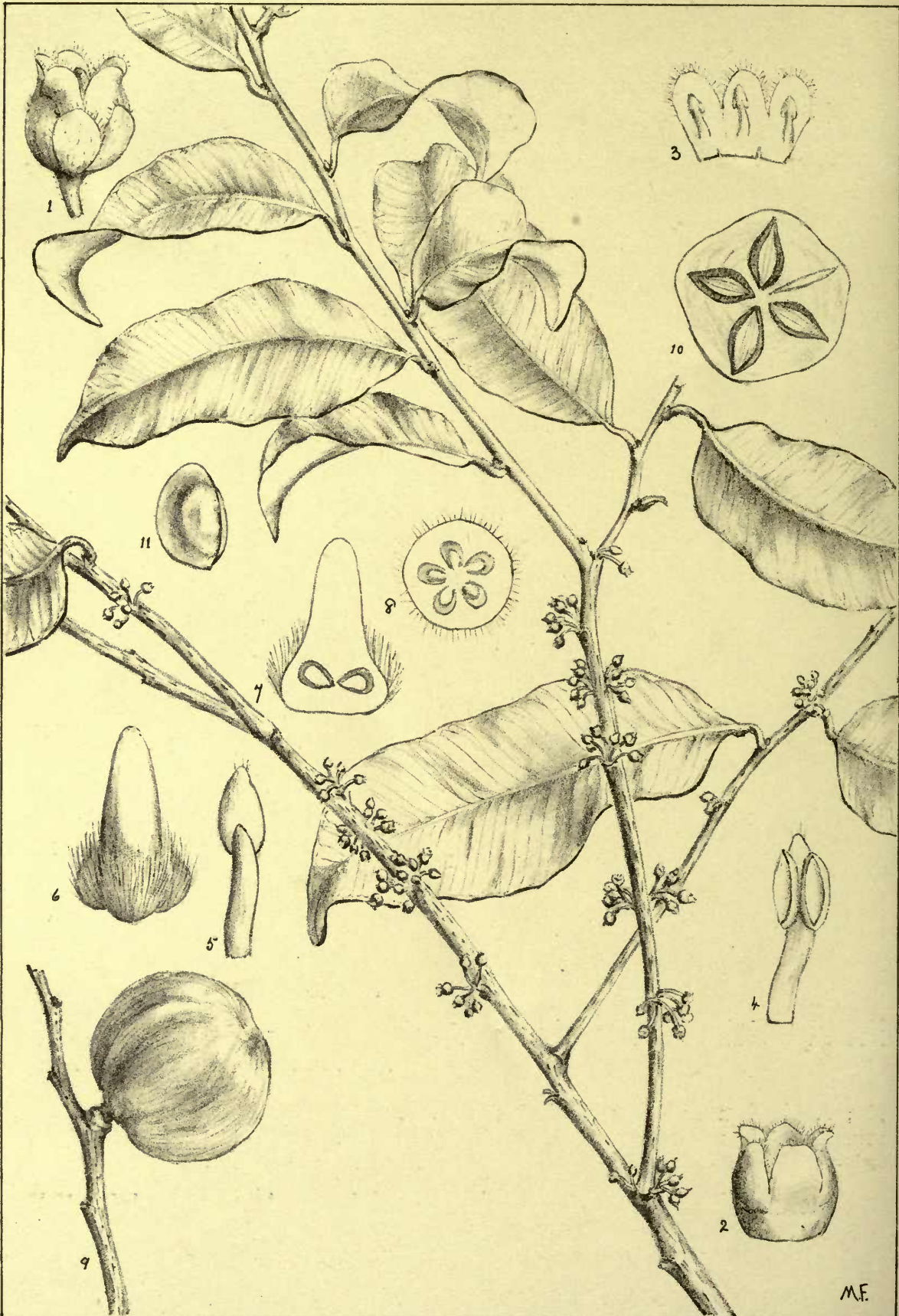
Fig. 1, raceme; 2, leaf; 3, plant much reduced; 4, perianth opened, showing stamens; 5, a stamen; 6, pistil; 7, cross section of ovary; *figs. 1 & 2 natural size, remainder enlarged.*



Galtonia candicans, Dcne.







M.F.

Chrysophyllum viridifolium, J.M.Wood & M.Franks.

PLATE 569.

CHRYSOPHYLLUM VIRIDIFOLIUM, Wood & Franks. Mss. nov. sp.

Natural Order, SAPOTACEÆ.

A large tree 30 to 50 feet high, with a girth at 6 feet from the ground of 5 feet. Trunk usually unbranched for 15 feet or more, and strongly many-ribbed to the origin of the branches, bark grey, young twigs, petioles, pedicels and calyx lobes finely rusty velvety tomentose, the older twigs glabrous. Leaves alternate, petiolate, exstipulate, oblong, obtuse or bluntly acuminate, rounded at base, margins entire; dark glossy green above, lighter and dull beneath, lateral veins very numerous, patent, but not quite horizontal, marginal vein fine, close to the margin; quite glabrous except the midrib beneath; 3 to 4 inches long, 1 to $1\frac{3}{4}$ inch wide, petiole 3 to 6 lines long, a little swollen. Flowers 1 to $1\frac{1}{4}$ line long, pedicillate, clustered in the axils or on the old twigs, few or many in each cluster (sometimes 20 or more), pedicels 2 lines long. Calyx 5-lobed, the lobes free nearly to base, erect, imbricate, ciliate. Corolla 5-lobed, lobes oblong, obtuse, ciliate. Stamens 5, inserted half way up the corolla tube and opposite to its lobes, filaments short, anthers 2-celled, extrorse, apiculate. Ovary depressed-globose, 5-celled, cells 1-seeded; densely rusty-pilose; style twice longer than the ovary, thick, stigma obtuse. Fruit a depressed-globose berry 16 by 13 lines, smooth, glabrous, yellow when ripe, 5-or by abortion 4-seeded, seeds oblong, compressed, keeled at back, testa brown and shining, hilum broadly linear, 9 lines long, 6 lines wide, 3 lines thick in centre, imbedded in a stiff tenaceous substance which is insoluble in water.

Habitat: NATAL. Berea, near Durban, 150 to 300 ft. alt. *Miss Franks*, (Wood 11636).

This tree was first brought to our notice by Miss Fountaine, an Entomologist who had found caterpillars feeding upon its leaves, but from the twigs and leaves that she brought the plant could not be identified. Before leaving the colony she indicated the place where the trees were found, and Miss Franks afterwards secured both flowering and fruiting specimens, and the tree was found to be quite new to science; it is not uncommon in the vicinity of Durban. It differs from *C. Welwitschii* in having much longer petioles, longer pedicels, and flowers twice as large. From *C. prunifolius* it differs in the shorter corolla tube, the larger number of flowers, the shape of the fruit, and the shorter seeds which do not taper to base. The genus *Chrysophyllum* includes 60 or more species in tropical and sub-tropical countries, some of which bear eatable fruits, such as *C. cainito*, the "Star Apple" of West Indies. In Africa we have 17 species, of which two are now found in Natal, the other being *C. natalensis*, the fruit of which is eatable. It is known as the "Natal Plum," and to the natives as "Intongwane." Its wood is used for making the milking vessels used by the natives, and which are cut out of the solid wood. The fruit of *C. viridifolium* is certainly not eatable, and the value of the wood, if any, is at present not known to us.

Fig. 1, a flower; 2, corolla; 3, portion of same showing stamens; 4, a stamen, front view; 5, same, back view; 6, pistil; 7, longitudinal section of same; 8, cross section of ovary; 9, fruit; 10, cross section of same; 11, seed; *figs. 1 to 8 enlarged*; *figs. 9, 10, 11, natural size*.

PLATE 570.

TROCHOMERIA GARCINI, Hook & Bth. (Fl. Cap. Vol. 2, p. 487, sub ZEHNERIA GARCINI.)

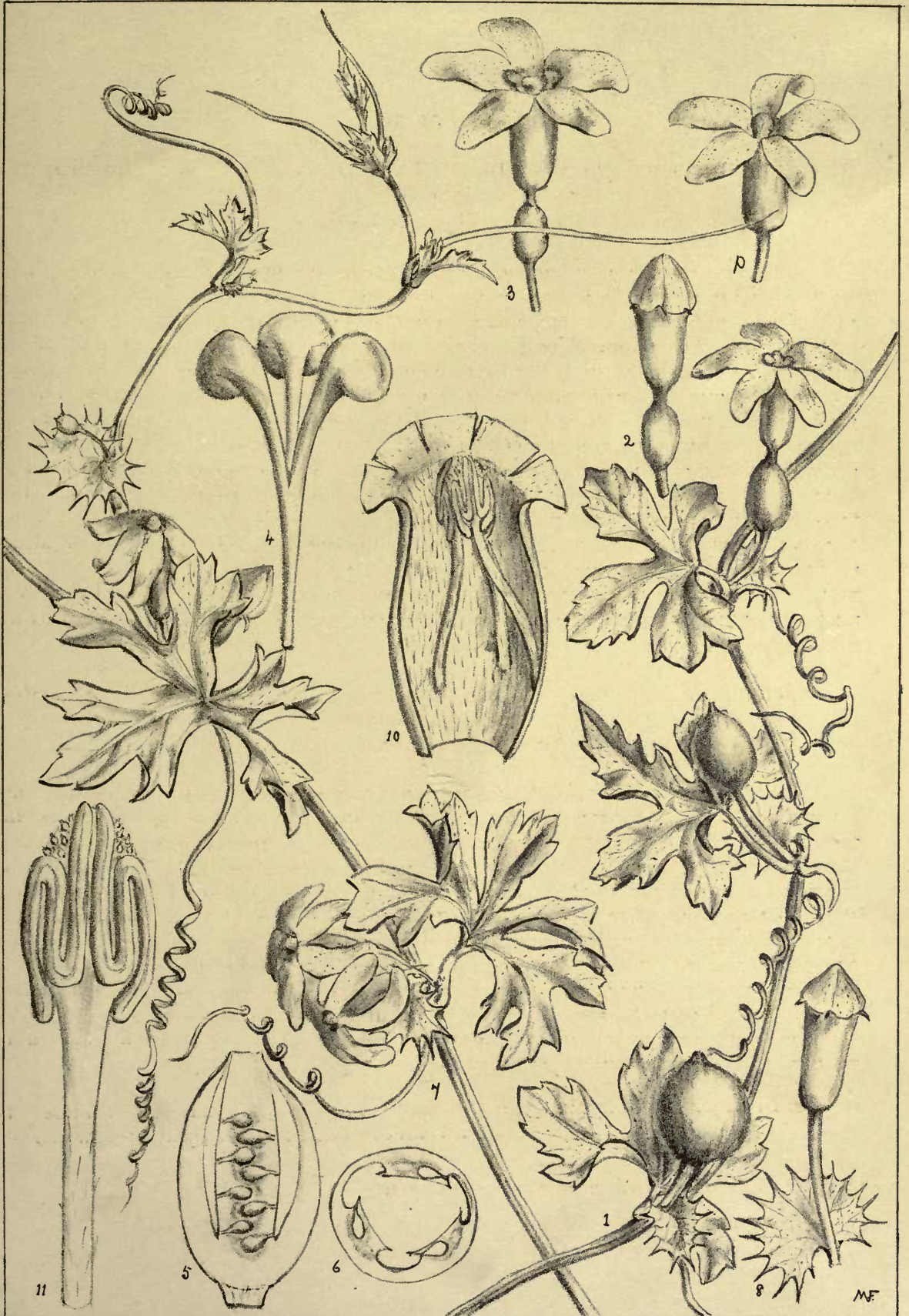
Natural Order, CUCURBITACEÆ.

A dioecious climbing plant, with green unisexual flowers. Stems several feet long, young portions hispidulous, older glabrous, tendrils simple. Leaves petiolate, palmately 3 to 5-lobed, the lobes again very irregularly toothed, serrate or almost lobed, usually mucronate, 2 to 3 inches long and broad, scabrous on both sides with minute rigid hairs, each springing from a multicellular swollen base; petiole $\frac{1}{2}$ to 1 inch long. Flowers on slender peduncles equalling the petioles in length. Inflorescence axillary. *Male flowers* on short peduncles, which are 1-3 flowered and have a cordate or sub-cordate bract at base, which is $\frac{1}{2}$ to $\frac{3}{4}$ inch long and broad, and ciliate with long bristles. Calyx tubular, very minutely 5-toothed at apex. Corolla rotate, 5-lobed nearly to base, almost continuous with the calyx tube, the lobes oblong, spreading, $\frac{1}{2}$ inch long, green. Stamens 3, inserted on tube of calyx, filaments free; anthers linear-elongate, one 1-celled, the others 2-celled, all flexuous. Ovary rudimentary. *Female flowers* solitary, calyx and corolla as in the male flower. Stamens 3, rudimentary. Ovary oblong, 1-celled, with 3 placentas, ovules many. Style 3-lobed, stigmas club-shaped. Fruit globose, glabrous, $\frac{1}{2}$ inch diameter. Ripe seeds not seen.

Habitat: NATAL Near Verulam, 500 ft. alt. July Wood 978; 'Ntunzini, Zululand, 200 ft. alt., August, November Haygarth (Wood 11018); Camperdown, 2,000 ft. alt. October Miss Franks (Wood 11800).

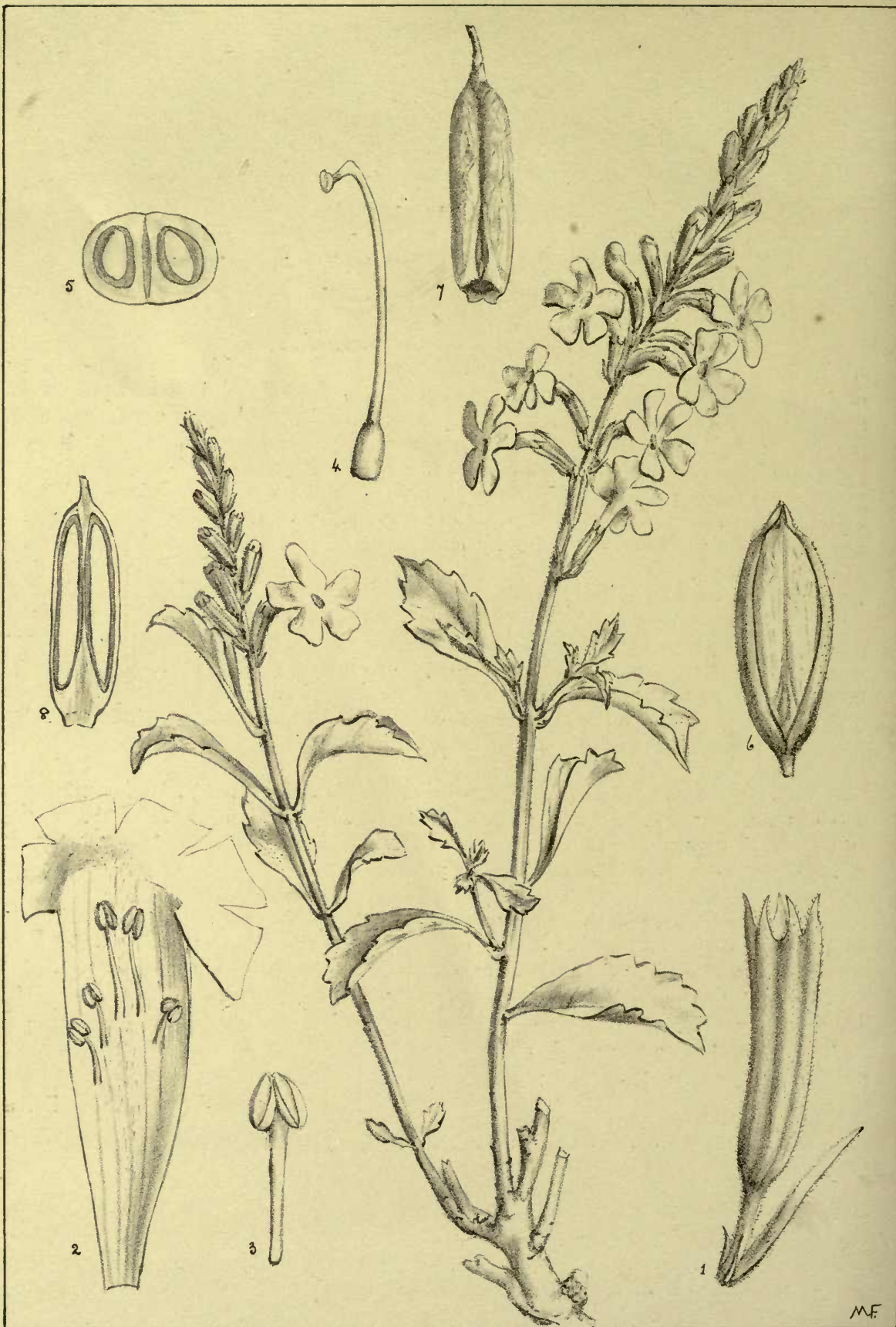
In the Flora Capensis, and also in the Thesaurus Capensis, this plant is described as *Zehneria Garcini*, Stocks, but the authors had at that time not seen the female flowers or the fruit. It has also been known as *Bryonia Garcini* and *Sicyos Garcini*, but now that female flowers and fruit have been seen it has been placed in the genus above named, the true *Zehneria Garcini* being a native of India and Ceylon, though its name also has been changed to *Blastania Garcini*, Cogn. The genus *Trochomeria* contains about 15 species, one being a native of Madagascar, the remainder of tropical and South Africa, and of these three *T. sagittata*, *T. pectinata* and *T. Garcini* have been found in Natal, though the last named appears in the "Revised List of Natal Plants" and also in the "Handbook to the Flora of Natal" as *T. Hookeri*, Harv., which is now a synonym. None of the species have any useful properties so far as is known to us.

Fig 1, portion of female plant; 2, bud; 3, flower; 4, style and stigmas; 5, longitudinal section of ovary; 6, cross section of same; 7, portion of male plant; 8, bud and bract; 9, flower; 10, calyx tube, showing stamens; 11, a stamen; *figs. 4, 5, 6, 10, 11, enlarged, remainder natural size.*



Trochomeria Garcini, Hook & Bth.





Bouchea cuneifolia, Sch.

PLATE 571.

BOUCHEA CUNEIFOLIA, Schauer. (Fl. Cap. Vol. 5, Part 1, p. 201.)

Natural Order, VERBENACEÆ.

A much branched undershrub, 12 to 18 inches high, with small white flowers. Stems very short, erect, branches more or less tetragonal, with two opposite lines of minute pubescence alternating in successive internodes. Leaves opposite or sub-opposite, exstipulate, petiolate, broadly cuneate or oblong-cuneate, gradually passing into the short petiole, rounded at apex, coarsely and acutely toothed in upper portion for half to two-thirds of their length, lower portion entire, veins pinnate, obscure, sparsely and minutely ciliate, otherwise nearly glabrous, $\frac{1}{2}$ to $1\frac{1}{2}$ inch long by 3 to 8 lines wide. Inflorescence racemose, racemes lax, 3 to 6 inches long, bracts linear subulate, minutely puberulous, 1-2 lines long, bracteoles 2, triangular-subulate, $\frac{1}{4}$ to $\frac{1}{2}$ line long. Calyx tubular, 5-ribbed, 5-toothed, minutely pubescent, 3 to 5 lines long, teeth $\frac{1}{8}$ to $\frac{1}{4}$ line long. Corolla tube long, slender, widening to throat, curved, glabrous, 6 to 9 lines long, lobes subequal, rounded, emarginate at apex, glabrous, 2 to 3 lines long. Stamens 4, didynamous, inserted on corolla tube, included, filaments short, anthers ovate, cells parallel. Ovary 2-celled, cells 1-ovuled, ovule basal, erect. Style filiform, bent near apex, with a minute tooth at the bend; stigma club-shaped. Capsule oblong, enclosed in calyx tube, hard, veiny, the calyx tube splitting longitudinally.

Habitat : NATAL. Umkomaas, 1,500 feet alt. March, *Wood* 877; Camperdown, 2,000 ft. alt., *Wood* in Govt. Herbarium 7101 October; Camperdown, 2,000 ft. alt., March, *Miss Franks* (*Wood* 11664.); near Durban, below 400 ft. alt., *Drege*; near Mooi River, *Gerrard & McKen* 1245.

This genus includes 20 to 30 species, of which 13 are found in south and 5 in tropical Africa, one of which is also in South Africa; other species inhabit East and West Indies. All the African species are low undershrubs, and so far as known to us have no economic value, but the leaves of a South African species, *B. pseudo-gervao*, have been used in Brazil as a substitute for tea. Of the South African species three only are found in Natal.

Fig. 1, calyx, bract and bracteole; 2, corolla tube opened, showing stamens; 3, a stamen; 4 pistil; 5, cross section of ovary; 6, split calyx and capsule; 7, capsule; 8, longitudinal section of same; *all enlarged*.

PLATE 572.

SCHMIDELIA AFRICANA, D.C. (Fl. Cap. Vol. 1, p. 239. Sub.-S. LEUCOCARPA.)
Natural Order, SAPINDACEÆ.

A shrub or small tree reaching to 20 feet or more in height, with small white unisexual flowers. Branches pale coloured, glabrous, lenticillate. Leaves alternate, trifoliate, exstipulate, ovate; common petiole, $\frac{1}{2}$ to $2\frac{1}{2}$ inches long; leaflets shortly petiolulate, the terminal 3 to $4\frac{1}{2}$ inches long, 1 to $1\frac{3}{4}$ inch wide, tapering very gradually to base, and very narrowly decurrent on the petiole, lateral leaflets 2 to 3 inches long, 1 to $1\frac{1}{2}$ inch wide, all with very irregularly sharply or bluntly toothed margins, veins pinnate, the main veins bearded on the axils on lower surface, the whole leaf otherwise glabrous. Inflorescence racemosely paniculate, the panicles shorter than the leaves, flowers small, unisexual. Calyx of male flowers 4-parted, segments concave, $\frac{1}{2}$ line long, yellow-green. Corolla of 4 petals, equalling calyx lobes, white, bearded on the face. Stamens 8, inserted within the disk, filaments filiform, free; anthers 2-celled, introrse. Disk of four small, globose, orange-coloured glands. Ovary rudimentary. Female flowers, calyx and corolla and disk of male; stamens 8, abortive and without pollen. Ovary didymous, style short, thick, bifid, the lobes recurved. Fruit of 2 fleshy 1-seeded carpels, one frequently abortive, glabrous, smooth, and red when ripe.

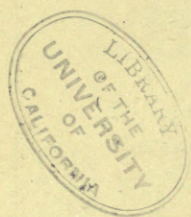
Habitat: NATAL: Drege; Gueinzus; Williamson; Inanda, 1,800 ft. alt. Jan. Wood 837; Berea, near Durban, 200 ft. alt. March, Wood 11804, and without precise locality, McKen 526. Described from Wood's 11804.

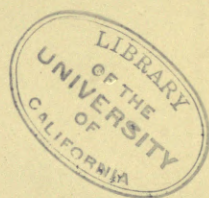
This genus includes 80 or more species, natives of tropical countries of the new and old world. In S. Africa we have 5 species only, while 10 or 12 are found in Tropical Africa. In the Flora Capensis 5 species are described. The first two are *S. melanocarpa* and *S. leucocarpa*; these two are the same thing, and the fruits are neither yellow nor black, but red when quite ripe, and its correct name is *S. Africana*, D.C. *S. natalensis*, as given in the Flora Capensis, is a synonym of *S. erosa*, and *S. Dregeana* of *S. monophylla*, while *S. Rehmanniana* is a species described since the publication of the Flora Capensis, and these, with *S. decipiens*, are the 5 Natal species. In Sim's "Forest Flora of Cape Colony," it is said that in tropical West Africa and Abyssinia, where this tree also occurs, "the fruits are said to be used as a remedy against Tapeworm; the dried fruits are pounded, mixed with flour, and then made into cakes." The Zulu name for the tree is "in-Gala," but I cannot learn that its fruits are used in any way, and the wood is too small to be of much value.

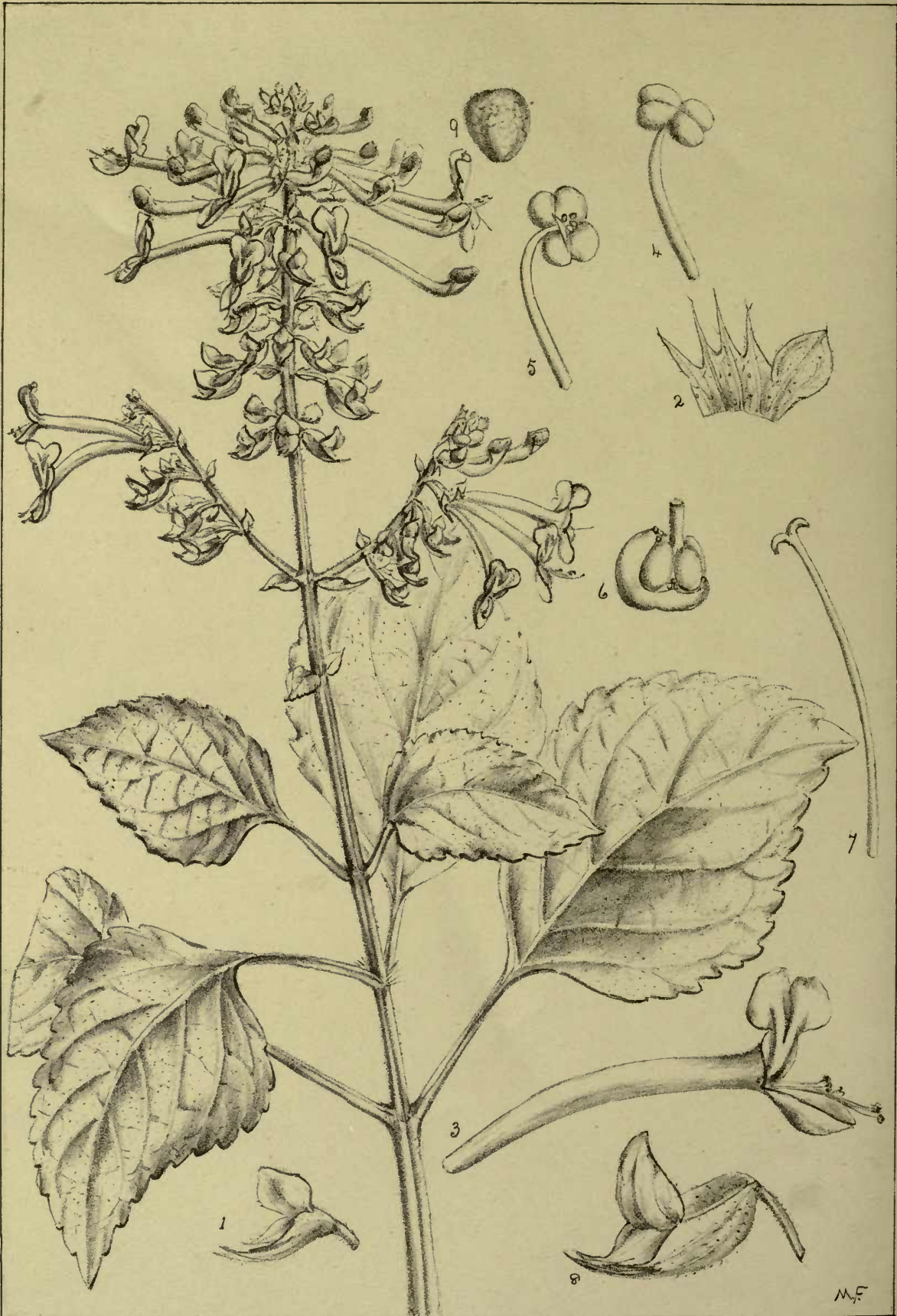
Fig. 1, portion of inflorescence; 2, female flower; 3, a petal; 4, female flower, calyx and petals removed; 5, cross section of ovary; 6, ripe berry; 7, male flower; 8, same, calyx removed; 9, same, petals removed; 10, stamen, back and front view; 11, pollen grain; Fig. 6 *natural size, remainder enlarged*.



Schmidelia africana, D.C.







Plectranthus coloratus, E. Mey.

PLATE 573.

PLECTRANTHUS COLORATUS, E. Meyer. (Fl. Cap. Vol 5, Sec. I, Part II., p. 279.)
Natural Order, LABIATÆ.

An undershrub, with lilac flowers. Stems much branched, from 12 to 18 inches high in open ground, from 3 to 4 feet in shade, quadrangular, pubescent, with tufts of white hairs at the nodes in younger portions. Leaves opposite, petiolate, ovate, acute, narrowed to the petiole, the margins then continued down the petiole forming a double ridge on its upper surface, irregularly crenate for $\frac{3}{4}$ of its length, entire in lower portion, minutely hispid on upper surface, more densely so on veins and veinlets beneath; petiole 1 to 3 inches long, minutely hispid. Inflorescence paniculate, verticillasters 4 to 6 flowered, sessile, bracts ovate-acuminate, minutely ciliate, 2-3 lines long, 1-2 lines broad; pedicels 2-3 lines long, pubescent. Fruiting calyx 3 lines long, bilabiate, upper lip erect, entire, ovate, acute, lower 4-toothed, the teeth acuminate, ciliate, the two lowest teeth the longest. Flowering calyx similar, but smaller, more open, and coloured. Corolla lilac, 1 inch or more long, tube narrow, straight, laterally compressed, not widening to throat, upper lip $\frac{1}{4}$ inch long, oblong; lower sub-entire, the upper portion 2-lobed, the lobes rounded, the upper appearing as two rounded lateral expansions, each with a white raised rib in centre. Stamens 4, didynamous, declinate; nutlets $\frac{3}{4}$ line long, oblong, rugulose, dark brown.

Habitat: NATAL. Inanda, 1,800 ft. alt., March *Wood* 480; near Murchison, 2,000-2,500 ft. alt. May, *Wood* 3036; near Eshowe, Zululand, April *Wood* 7591; near Durban, *Gueinzus*; Dumisa, *Rudatis* 314; without precise locality, *Gerrard* 1671; near Durban, 250 ft. alt., April *Miss Franks* (*Wood* 11809). Also in Transkei, Pondoland and Cape Colony.

Two species of this genus have already been figured and described in this work, viz., *P. saccatus* in Vol. 1, plate 85; and *P. tomentosus* in Vol. 4, plate 316. The species above described has, as will be seen, a wide range of distribution in South Africa, but it has no special value, except, perhaps, as an ornamental plant.

Fig. 1, calyx; 2, same opened; 3, corolla; 4, stamen; 5, same, back view; 6, disk and ovary; 7, style and stigma; 8, fruiting calyx; 9, nutlet; *all enlarged*.

PLATE 574.

KEDROSTIS GLAUCA, Cogn. (Fl. Cap. Vol. 2, p. 484, sub-CONIANDRA.)

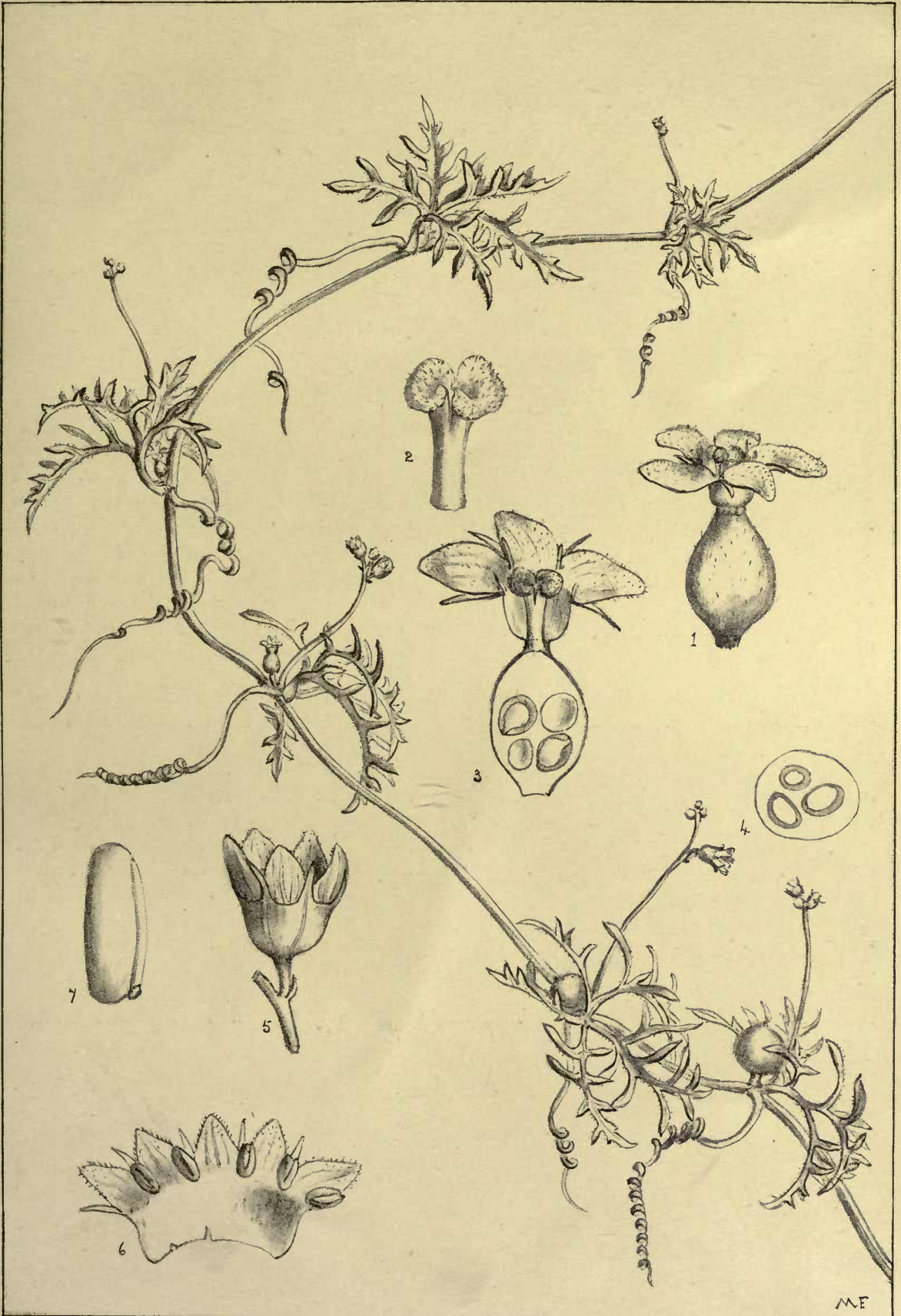
Natural Order, CUCURBITACEÆ.

A slender climbing plant with greenish-yellow unisexual flowers. Leaves opposite, petiolate, 3 to 5 parted, the lobes irregularly cut into many entire, toothed, lobed or branched linear segments, which are $\frac{1}{2}$ to $1\frac{1}{4}$ line broad; petiole 4-5 lines long, the whole leaf 1 to $1\frac{1}{2}$ inches long, the uppermost leaves smaller, all of them very variable, tendrils longer than the leaves and opposite to them, simple. Male flowers pedunculate, peduncle up to 1 inch long, bearing 2-3 flowers on very short pedicels. Calyx campanulate, 5-fid, lobes acute. Corolla gamopetalous, 5-lobed, the lobes obtuse. Stamens 5, on throat of corolla, alternate with its lobes, filaments short, anthers linear-oblong, 1-celled. Female flowers, calyx and corolla as in the male, but corolla lobes spreading horizontally. Stigma sub-capitate, 2-lobed. Fruit a red globose 3-4 celled berry, about 4 lines diameter.

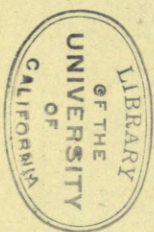
Habitat: NATAL. *Drege*; near Estcourt, 3,000 to 4,000 ft. alt. February *Wood* 10292: Camperdown, 2,000 ft. alt. October *Miss Franks*, (*Wood* 11808). Also in Cape Colony.

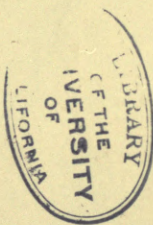
In the 2nd volume of the *Flora Capensis*, which was published in 1862, this plant appears as *Coniandra glauca*, *Schrad*, but the genus is now abolished in favour of *Kedrostis*, under which name all the species formerly belonging to *Coniandra* are now known. Seventeen species have been described, of which 15 are natives of Tropical and South Africa, one of East Indies, and one of Abyssinia. None of the species have any useful properties so far as known to us, but *K. foetidissima*, *Cogn.* is, when crushed or even trodden upon, exceedingly fetid; its odour is most disgusting. It is a native of the coast districts of Natal.

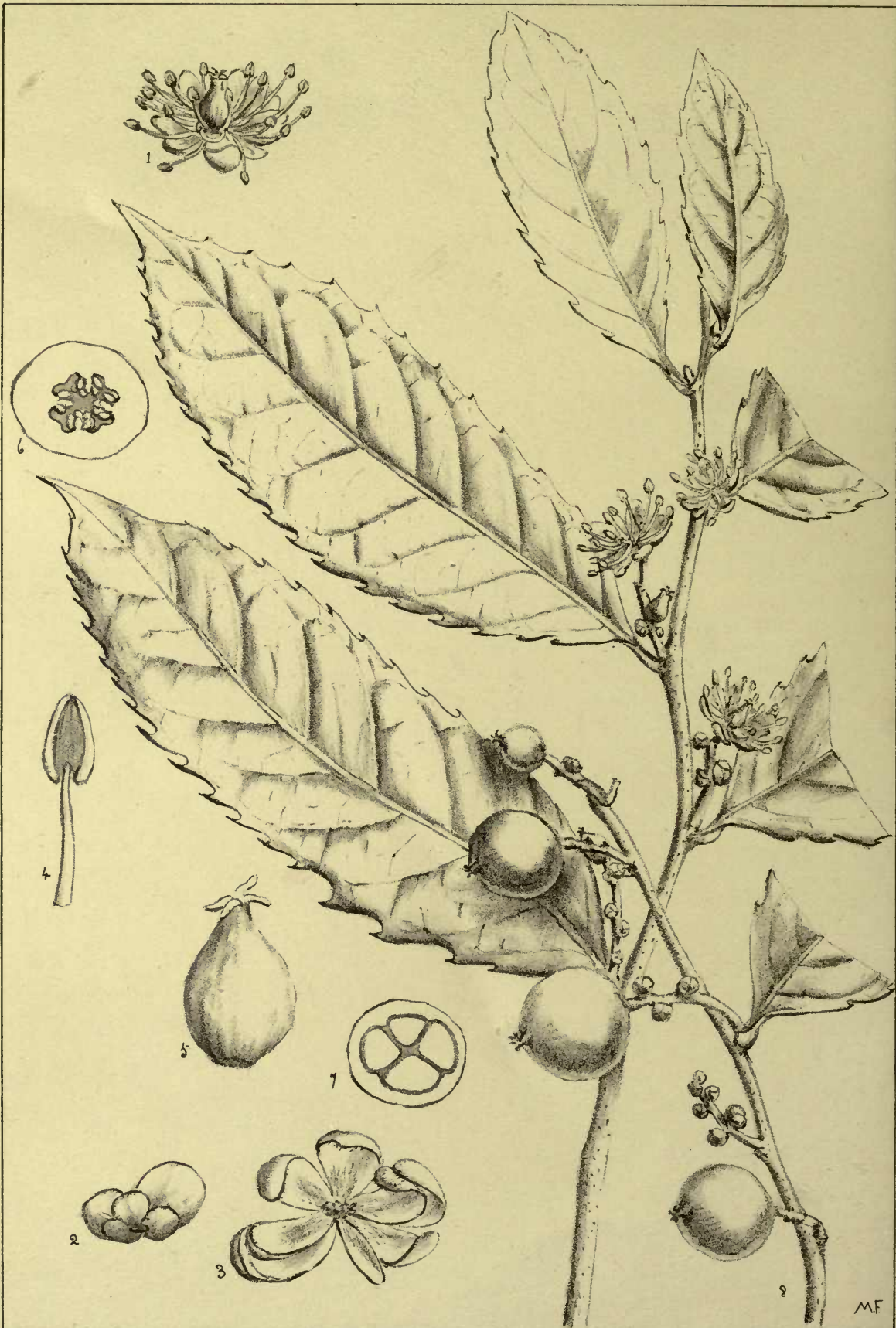
Fig. 1, female flower; 2, style and stigma; 3, longitudinal section of female flower; 4, cross section of ovary; 5, male flower; 6, same opened; 7, stamen; all enlarged.



Kedrostis glauca, Cogn.







Rawsonia lucida, Harv.

PLATE 575.

RAWSONIA LUCIDA, Harv. & Sond. (Fl, Cap. Vol. 1, p. 67.)

Natural Order, BIXACEÆ.

A shrub with large glossy leaves and white flowers. Leaves alternate, exstipulate, petiolate, oblong, sharply dentate-serrate, coriaceous, glabrous, acute or acuminate, gradually or abruptly narrowed to the petiole, 3 to 7 inches long, 2 to 3 inches wide; petiole 5 lines long, swollen. Inflorescence in short 3 to 7 flowered axillary spikes, the common peduncle $\frac{1}{2}$ to $\frac{3}{4}$ inch long; flowers hermaphrodite or unisexual, often mixed on the same spike. Calyx 4-5 parted, the sepals very unequal, concave, imbricate, persistent. Corolla of 4-5 deciduous unequal, concave petals, which are longer than the sepals. Petaloid scales, one opposite each petal, and longer than them, hypogynous, each with a fleshy 2-lobed gland at base. Stamens 40-60, in several rows, the inner hypogynous, the outer attached to the base of the petaloid scales. Anthers sagittate, erect. Ovary on a convex torus, 1-celled, with 4-5 parietal many ovuled placentas. Stigma subsessile, 4-5 parted. Fruit a light green globose berry, 10 lines diameter, several seeded.

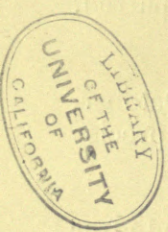
Habitat: NATAL. *Sanderson*. Inanda, 1,800 ft. alt. September, October, Wood 1045; near Durban, 150 ft. alt., *Miss Franks*; *A. D. Millar*; without precise locality, *Gerrard & McKen* 1138.

A shrub 10-12 feet in height, of no special value. The genus is named after Rawson W. B. Rawson, C.B., who was at one time Secretary to Government of Cape Colony, and who was joint author of a "Synopsis Filicum Africæ Australis," and who gave much assistance to the authors of the early volumes of the Flora Capensis. It is a monotypic genus.

Fig. 1, hermaphrodite flower; 2, calyx; 3, petals and scales; 4, stamens; 5, pistil; 6, cross section of ovary; 7, cross section of fruit; 8, branch with fruits; *figs. 1 to 6 enlarged; figs. 7 & 8 natural size.*

PLATE 1

PLATE 1. (1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100)





Crassula recurva, N.E.B.

JAE

PLATE 576.

CRASSULA RECURVA, N. E. Brown. (Gard. Chronicle Vol. VIII., p. 684.)

Nat. Order, CRASSULACEÆ.

An herbaceous perennial with stems 8 inches to 1 foot in height, the stems, leaves, pedicels and calyx covered with reflexed white hairs, those on the leaves shorter and more papilla-like. Stems simple or occasionally branched, often more than one from the same rosette of leaves, green or reddish purple. Leaves of the rosette 2 to 3 inches long, one-third to half an inch broad, sessile, broadly linear-lanceolate, acuminate, flat or slightly concave above, convex beneath, green, spotted with reddish-purple above, entirely red purple beneath; stem leaves similar but smaller, and recurving or strongly revolute. Cymes of moderate size, flat-topped. Calyx lobes linear-lanceolate, acute, green or purple, about $2\frac{1}{2}$ lines long. Petals a little longer than the calyx lobes, oblong, acute, with recurved spreading tips, pale rosy purple. Stamens as long as the petals, filaments whitish, anthers brown with yellow pollen.

Habitat: NATAL, ZULULAND. Entumeni, 2,000–3,000 ft. alt. April, 1888, Wood; same locality, April, 1911, W. J. Haygarth in *Herbarium Wood* 11,867.

The above description of this apparently rare and rather remarkable plant has been taken almost verbatim from Mr. Brown's original and excellent description after comparison with the ample material gathered by Mr. Haygarth. Mr. Brown further says: "It is in the way of *C. rubicunda*, but not so showy in its flowers, "in the young stage, however, the rosettes of purple and green leaves are rather "attractive, when the flowering stems are developed the radical leaves disappear "and those on the stem being more or less recurved or revolute, give it a somewhat "remarkable appearance." So far as at present known to us this plant seems to be confined to the locality given above, and even there it is not plentiful.

Fig. 1, rosette of leaves; 2, flowering stem; 3, a flower; 4, two of the corolla lobes with squamæ and stamens; 5, a stamen; 6, carpels; 7, longitudinal section of carpel; 8 seed; figs. 1 and 2, *natural size*, remainder *enlarged*.

PLATE 577

FLEURYA CAPENSIS, Wedd. (In. Ann. Sc. Nat. Ser. IV., 1854.)

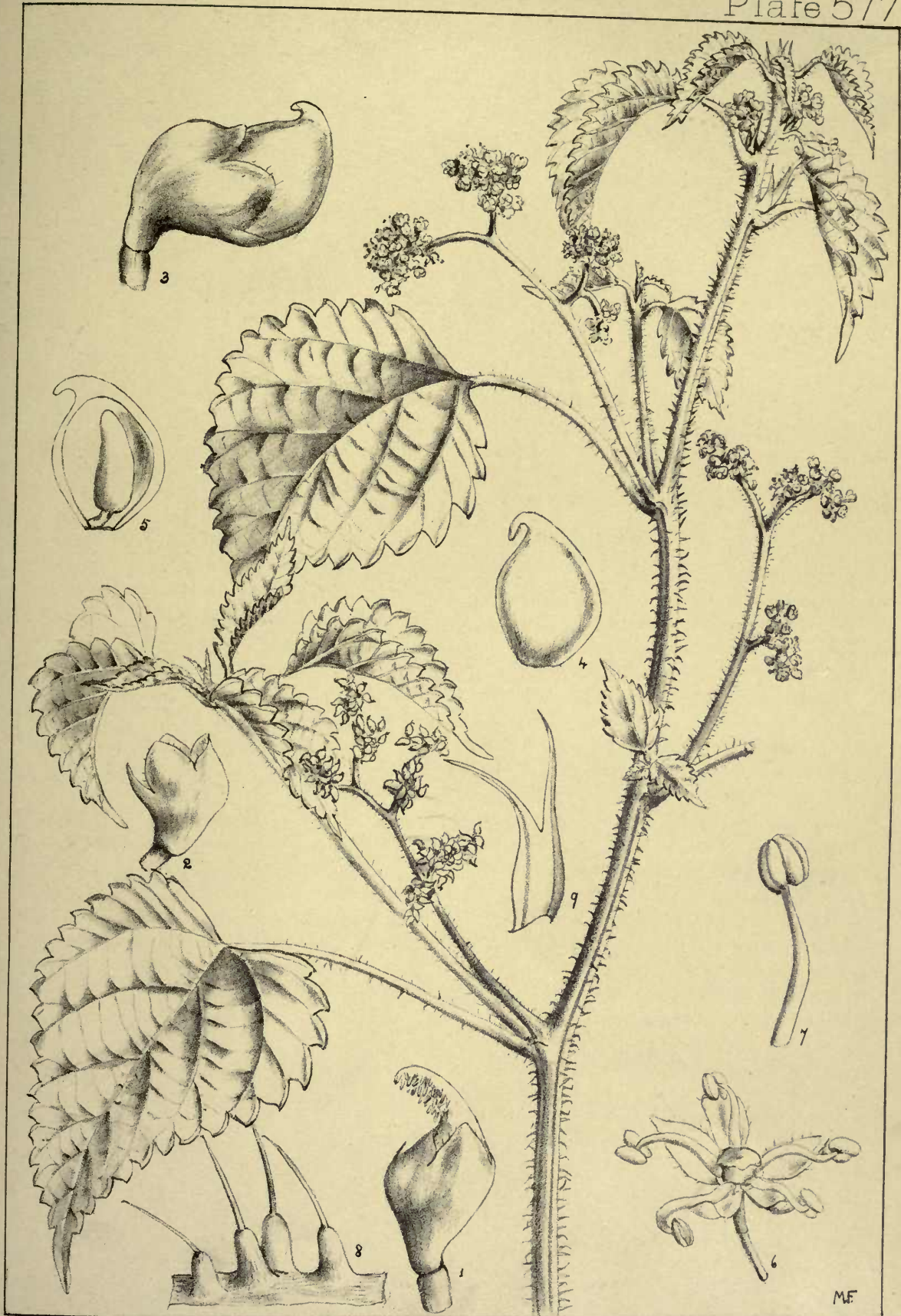
Nat. Order URTICACEÆ.

An annual herb with stinging hairs, and monoecious flowers. Stems elongate, erect or prostrate and rooting at the nodes, reaching to 4 to 6 feet in length, much branched; stems, branches and petioles thickly clothed with stinging hairs which have an inflated tubular base. Leaves alternate, petiolate, ovate-acuminate, sharply and regularly serrate, except at the obtuse base, 2-3-inches long, 1-2½-inches wide, dark green and subglabrous above, paler and finely pilose on the veins beneath, veins pinnate; petiole 1-1½-inch long. Inflorescence in axillary paniced cymules which are shorter than the leaves. Male flowers 5-parted, segments broadly lanceolate, spreading, glabrous. Stamens 5, opposite the perianth segments, and exceeding them in length, hypogynous, anthers 2-celled, dorsifixed. Female flowers 4-lobed, lobes unequal, the inner largest. Ovary becoming more or less oblique, shortly stalked; stigma sessile, thickened, stigmatose on lower surface, at length reflexed. Achene roundish, oblique, compressed, glabrous.

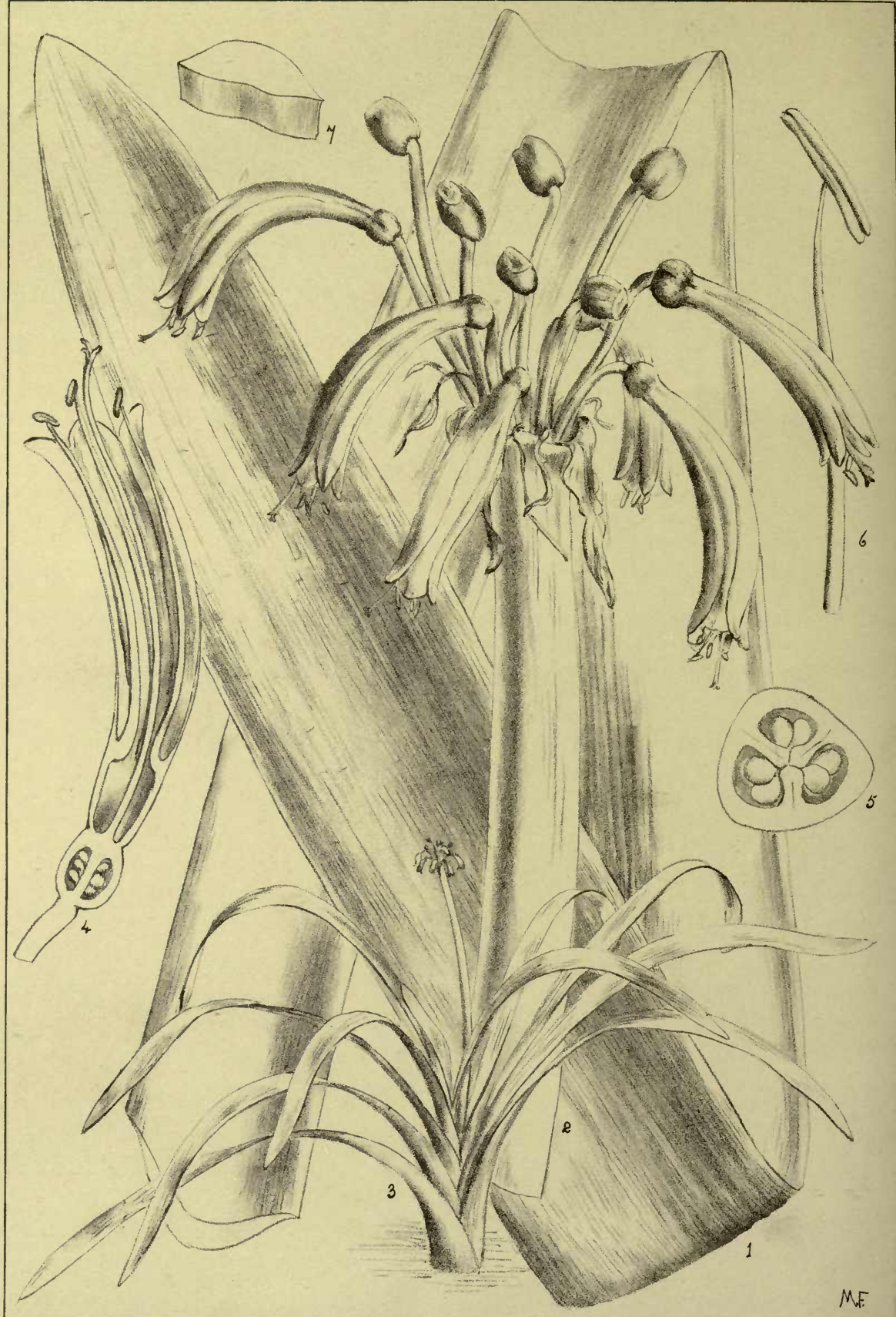
Habitat: NATAL. Inanda, 1,800 ft. alt. Wood 1251, December, 1880; near Durban 100 ft. alt., June, 1911, Wood 11878.

The genus *Fleurya* includes 8 or 9 species, two, perhaps three of which are natives of Natal, the genus differs from *Urtica* by its alternate leaves, oblique achenes, and thickened or oblique stigma. The stinging or irritating hairs of *F. capensis* are confined to the stem, branches, petioles, and peduncles, the small hairs on the leaves being harmless in this respect. Another species of this genus collected in woods near York and Byrnetown (Wood, 1880) is much more irritating than *F. capensis*, and the natives always give it a wide berth where it is plentiful, it is much worse than the common nettle, *Urtica urens*, to which these plants are closely related.

Fig. 1, female flower; 2, perianth of same; 3, achene and perianth; 4, achene; 5, longitudinal section of same; 6, male flower; 7, stamen; 8, portion of stem showing hairs; 9, bract; *all enlarged*.



Fleurya capensis, Wedd.



Clivia Gardeni, Hook.

PLATE 578.

CLIVIA GARDENI, HOOK. (Fl. Cap Vol. VI., p. 228.)

Nat. Order, AMARYLLIDÆ.

An herbaceous perennial, bearing umbels of orange red flowers. Bulb imperfect composed of the dilated bases of the leaves. Leaves strap-shaped, distichous, bright green, glabrous, margin smooth, 2ft. to 2 ft. 6 inches long, 2 inches broad in the centre, 17 to 18 lines at the base, tapering very gradually to an acute apex. Peduncle stout, strongly ancipital, 12 to 20 inches long, flat on one side, convex on the other, $\frac{3}{4}$ to 1 inch wide in widest portion. Umbels 12 to 20-flowered; pedicels 1 to $1\frac{3}{4}$ inches long; spathe valves several, oblong, tapering gradually upwards 1 to $1\frac{1}{2}$ inch long; perianth orange red tipped with green, curved, tubular, widening to throat, 1 to $1\frac{3}{4}$ inch long, tube very short, segments 6, linear-oblong, the three outer ones acute the three inner ones obtuse, all $1\frac{1}{4}$ inch long, $\frac{1}{4}$ to $\frac{1}{3}$ inch broad. Stamens 6, inserted at throat of perianth tube, finally a little exserted, filaments filiform, anthers oblong, dorsifixed, versatile. Ovary inferior, 3-celled, globose, cells 5-6-ovuled. Style a little longer than the stamens, minutely 3-fid at apex. Fruit a bright red pulpy berry, about 1 inch long, subglobose or ovoid.

Habitat: NATAL. *Garden*; Transvaal Hort *Nelson*. Durban, plants purchased from a native and planted in garden, *Wood* 11879.

The genus *Clivia* is peculiar to South Africa and contains 3 species only, viz., *C. nobilis*, Lindl. *C. miniata* Regel. and the above described species. *C. miniata* was figured and described in the present volume plate 503. According to the Flora Capensis the chief difference between *C. Gardeni*, and *C. nobilis* is that in one the leaf is not narrowed to the apex, and in the other it is so, and as in the present species the leaf is certainly narrowed to the apex, I have with some mis-giving called it *C. Gardeni*, we have not seen any authentic specimen of that plant, but our specimen quite agrees with the description of *C. Gardeni* in the length and shape of the leaf, and its smooth, not scabrous margins, I have decided to allow it to stand.

Fig. 1, leaf; 2, peduncle with umbel; 3, plant much reduced; 4, longitudinal section of flower; 5, cross section of ovary; 6, a stamen; 7, cross section of peduncle; figs. 1, 2, 7 *natural size*, 4, 5, 6 *enlarged*.

PLATES 579 & 580.

ALOE MARLOTHII, A. Berg. (Engl. Jahrb. XXXVIII., p. 87.)

Nat. Order, LILIACEÆ.

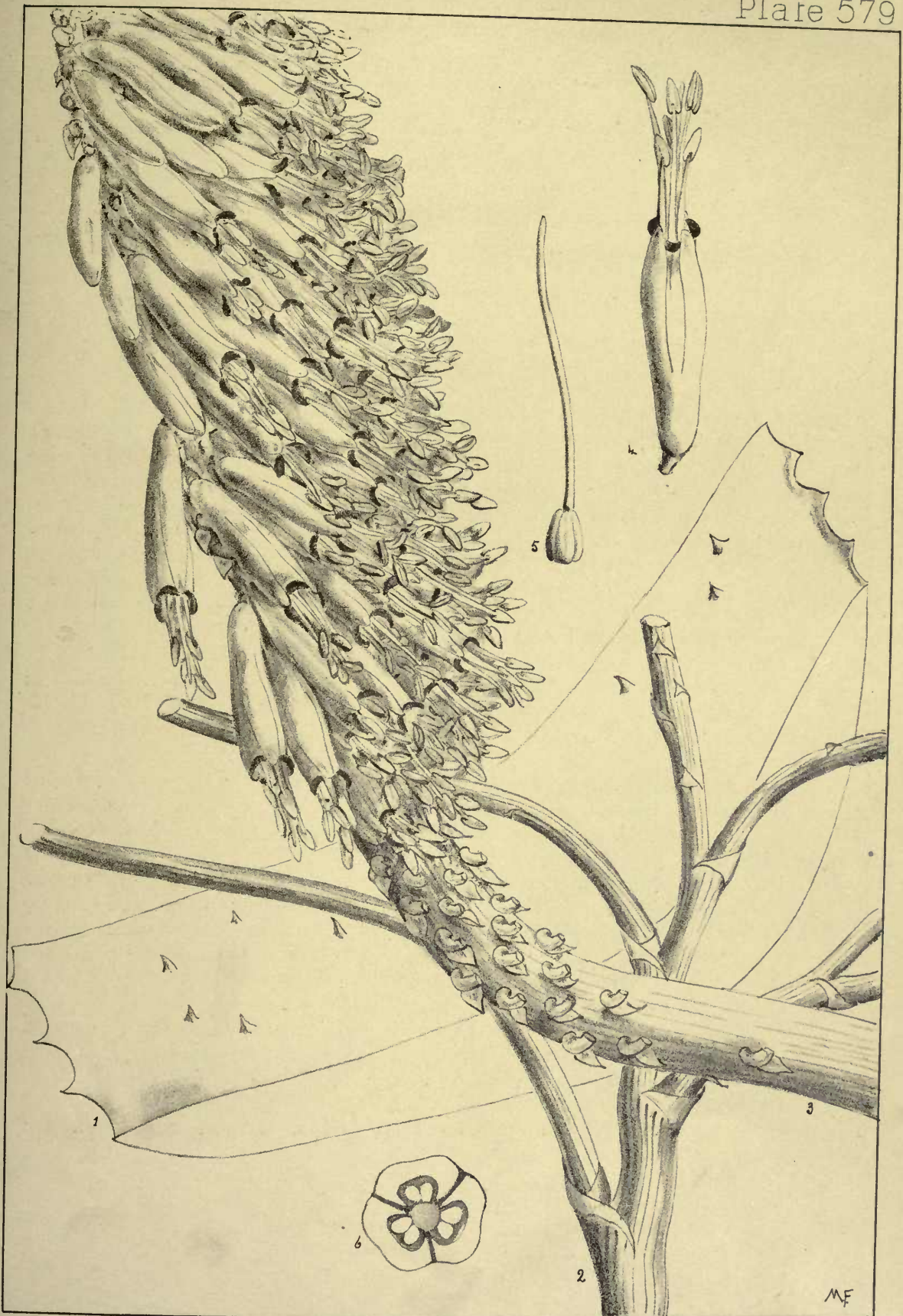
Stem stout, simple, erect, 10 to 12 feet long below the leaves. Leaves rosulate, erect, 1 to $2\frac{1}{2}$ feet long, 7 inches wide at base, $\frac{1}{2}$ to $\frac{3}{4}$ inch thick, the rosettes large, the leaves many, lanceolate-ensiform, fleshy, distinctly acuminate, convex below, canaliculate above, especially towards the apex, the margins erecto-incurved on both sides; on both sides, but especially beneath, spine bearing, the margins armed with stout brown spines. Inflorescence much branched, peduncle stout, and like the lower branches more or less ancipitous (in dried specimens), 10 inches long, $2\frac{1}{2}$ inches thick, the lower branches again branching, upper ones simple, all erecto-patent or sometimes curved at base. Racemes up to 12 inches long, densely many-flowered, subsecund; bracts ovate, acute, 1-nerved, 3 lines long; perianth straight, $1\frac{1}{4}$ inch long, oblong, orange-red, tube short, the three inner segments black at apex. Stamens long exserted, filaments subulate, anthers dorsifixed, versatile. Ovary sessile, 3-celled, many ovuled, ovules superposed; style filiform, stigma minute. Capsule oblong, 3-angled, coriaceous, loculicidally opening, 10 to 14 lines long, 6 lines wide. Seeds triquetrous, winged.

Habitat: NATAL. Near Ladysmith, 3,300 ft. alt., flowering in August, sent by J. C. Haycroft; from same locality August T. W. Turner in *Herb. Wood* 11714, with dried sap. Also in Bechuanaland, *Marloth* 3788, flowering in November.

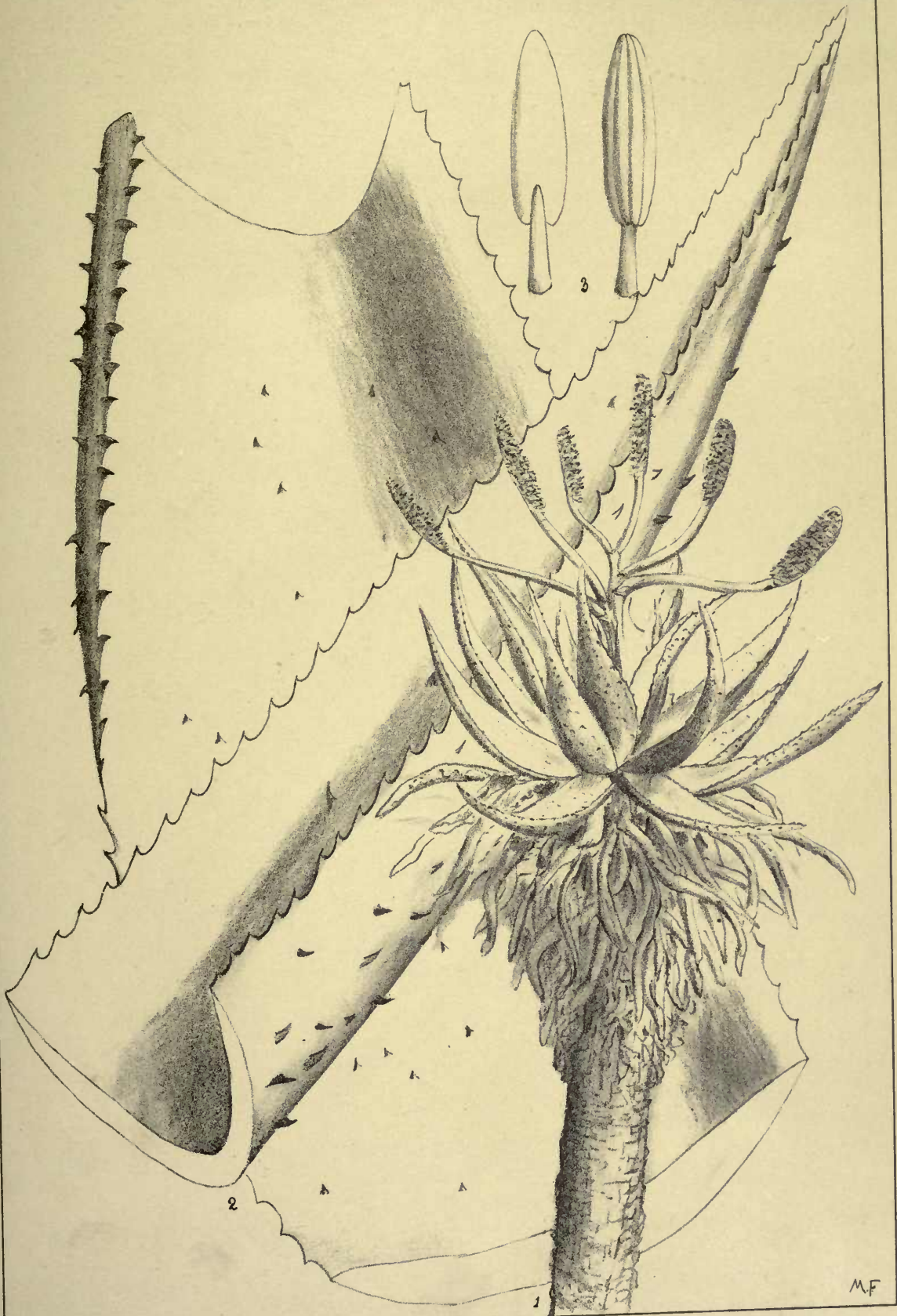
This plant has until lately been confused with *Aloe ferox*, but is now recognised as a distinct species, and may probably prove to be the variety "incurvata," which at the time the description of *A. ferox* was written was only known from "young plants in Mr. Cooper's collection." The dried sap which was kindly obtained for me by Mr. T. W. Turner was sent to Mr. E. M. Holmes the Curator of the Museum of the Pharmaceutical Society in London, and he says: "The piece you sent me "gives no colour reaction with either nitric or sulphuric acid, and cannot therefore "be identical (as regarded from the chemical point of view) with *Aloe ferox*, since "the dried juice of that Aloe gives a crimson with nitric acid."

Plate 579. Fig. 1, base of leaf, *natural size*; 2, branches of inflorescence, *reduced*; 3, raceme; 4, a flower; 5, pistil; 6, cross section of ovary; *figs. 4, 5, 6, enlarged*.

Plate 580. Fig. 1, plant, *much reduced*; 2, leaf, *about half natural size*; 3, anther, back and front view, *enlarged*.



Aloe Marlothii, A. Berger



Aloe Marlothii, A. Berger.



Dimorphotheca fruticosa, Less.

PLATE 581.

DIMORPHOTHECA FRUTICOSA, Less. (Fl. Cap. Vol. III., p. 419.)

Nat. Order, COMPOSITÆ.

A small much branched decumbent undershrub. Stems usually trailing on the ground, sometimes erect or suberect, herbaceous except at the base, often rooting at the nodes, laxly leafy, glabrous. Leaves alternate, obovate-spathulate, obtuse and rounded at apex, occasionally with a minute apiculus, gradually tapering to the very base, thick and fleshy, $1\frac{1}{2}$ to 2 inches long, $\frac{3}{4}$ to 1 inch wide in upper portion, quite entire or occasionally minutely and sparingly toothed, glabrous or minutely scaberulous, midrib rather prominent, veins and veinlets obscure. Flower heads pedunculate, solitary, radiate. Involucre uniseriate, of 8 to 16 lanceolate, acute, green, fleshy scales. Ray florets ligulate, female, their corollas 3-toothed, white above, dull purplish beneath. Disk florets 5-toothed, all abortive. Receptacle convex, glabrous. Young achenes 3-angled, tapering to base, glabrous, with 3 tubercles at apex. Ripe achenes not seen.

Habitat: NATAL. Usually near the sea coast in sandy soil. *Drege*; *Williamson*: sea beach near Durban, *Wood*: same locality, April, *Wood* 902; near Verulam in sandy soil, Jan., *Wood* 10210; Winkle Spruit, 10 to 20 ft. alt., *Miss Franks* (*Wood* 11899); same locality, *Rudatis*.

Also in Cape Colony.

The genus *Dimorphotheca* includes about 20 species, the whole of which are South African, 4 being found in Natal, the remainder in Cape Colony, Transvaal, and O.R. Colony. Of the 4 found in Natal, the one here described, is usually found in sandy soil near the sea, the other three in the upper districts, and one of these *D. Barberiæ*, bears handsome bright purple flowers, and has been introduced into Europe, "but the cultivated specimens do not show the brilliant purple of the wild ones," this plant is, however, rather rare in Natal. None of the species have any economic value, though two or three of them have been cultivated in Europe.

Fig. 1, involucre; 2, ray floret; 3, style and stigmas of same; 4, achene; 5, disk floret; 6, three of the stamens; 7, style and stigmas of disk floret; *all enlarged*.

PLATE 582.

ZEUXINE COCHLEARIS, Schltr. (Orchids of S. Africa, Bolus, Vol. I. t. 58.)

Nat. Order, ORCHIDEE.

A herb with a sometimes creeping rhizome and thick brown hairy roots, for the rest quite glabrous. Stem erect, terete, leafy, scaly at base, 5-30 c.m. high; Leaves erect, spreading, linear-lanceolate, acute, amplexicaul and sheathing at base, netted veined when dry, 2 to 4 times longer than the internodes, 2-5 c.m. long. Spike oblong or narrow ovate, densely many flowered, 1, 5-2, 5 c.m. long, bracts acuminate, longer than the flowers. Flowers somewhat bent downwards, about 2, 5-3 mill. long, sepals connivent, ovate-lanceolate, subobtus, the odd one more concave and slightly gibbous at the base. Petals semi-ovate, the exterior margin undulate; lip somewhat fleshy, spoon-shaped, inflated at base, rather widened at apex, margins incurved, undulate and irregularly crenulate, furnished at the base within with 2 parallel linear ridges. Anthers rounded; rostellum bipartite, the segments subulate acuminate; pollinia pear-shaped, stipes strap-shaped, dilated towards the apex; gland very small.

Habitat: NATAL. Marshy sandy soil near the sea shore, near mouth of Umgeni River, *Schlechter* 3001, 3002; same locality *Wood* 5321. Drawn from one mature and one small specimen from same locality obtained in July, 1911. *Wood* 11922.

The above excellent description was written by the late Dr. Bolus, and was published with figure in "Orchids of South Africa," Vol. 1, t. 58, and in a note he says: "Colour of sepals and petals white, the lip golden yellow. One of Mr. Schlechter's numerous discoveries, the more interesting as the representative of a genus new to South Africa, and only the third species of the Tribe Neottieæ known within our limits. The author states that it resembles *Z. sulcata*, *Lindley* (from India and China) but in habit only, while its flowers recall those of some *Spiranthes*."

In the drawings of the details of the flower Dr. Bolus gives two figures of the pollen masses and their gland, the first one being "as drawn by Mr. Schlechter, the other as seemed to me their probable position." In the drawing here given fig. 9 represents the pollen masses and their gland as drawn by Miss Franks from a good fresh specimen, and it will be seen on comparison that it differs from both of the figures as drawn by Dr. Bolus, Mr., now Dr. Schlechter's drawing being nearly though not quite correct. The hairs on the roots as described by Dr. Bolus and shown in his drawing have not been observed in any specimen seen by us.

Fig. 1, flower and bract; 2, odd sepal and petals; 3, same opened; 4, lateral sepals; 5, labellum; 6, ovary, labellum and column; 7, column, side view; 8, same front view; 9, pollen masses; *all enlarged*,



M.F.

Zeuxine cochlearis, Schltr.



Pelargonium Woodii, N.E.B.

PLATE 583.

PELARGONIUM WOODII, N. E. Brown. (Kew Bulletin 1909, p. 306).

Nat. Order, GERANIACEÆ.

An herbaceous plant with very short woody stems. Leaves 5 to 6 inches long, $2\frac{1}{2}$ to 3 inches wide, oblong in general outline, narrowing towards apex, obtuse, pinnately lobed, the lobes or segments imbricate, cuneate, the lowest ones shortly petiolate, central sessile, uppermost ones decurrent, and becoming incispinnatisect, the lobes and lobules crenato-dentate, the lobes of the lower half of the leaf bipartite, the whole leaf and petiole glandular pilose; petiole 2 to 3 inches long. Peduncles and petioles glandular pilose, the peduncles 5 to 8 inches long; umbels 6 to 12 flowered, pedicels $2\frac{3}{4}$ to $3\frac{1}{2}$ inches long, spreading horizontally from above the swelling. Bracts many, lanceolate from a broad base, erect or sub-erect; pedicels 4 to 10 lines long below the swelling, $1\frac{3}{4}$ inch above it. Sepals 5, oblong, acute, 4 to 5 lines long, 2 lines wide, strongly reflexed, dull red. Petals 5, cuneate, multifid-laciniate, $\frac{3}{4}$ inch long by $\frac{1}{2}$ inch wide, the two upper ones greenish straw colour, the lower ones deep pink. Stamens 10, unequal in length, 5-7-fertile, remainder barren. Ovary of 5 uniovulate carpels, which cohere round a torus to which the styles adhere; stigmas 5, recurved, stigmatic on outer surface.

Habitat: NATAL. Slopes of Drakensberg Mts., 5-6,000 ft. alt. Olivers Hoek, Jan., 1886. Living plants. Impendhle, 5-6,000 ft. alt. Wylie, living plants.

Drawn and described from plants growing in Botanic Gardens, Durban, and which were brought from the upper districts.

This plant belongs to the Section Polyactium which has tuberous roots, lobed or pinnately decomposed leaves, and many flowered umbels, and to that division whose petals are fimbriato-multifid, this part of the Section includes so far as we can ascertain from the Flora Capensis, 5 species only, 4 of which are natives of the Cape Colony, while the above described species has so far as we are aware only been found in Natal, though it may probably be found in the Orange River Colony also.

Fig. 1, plant; 2, leaf; 3, inflorescence; 4, flower, petals removed and tube opened; 5, pistil; 6, cross section of ovary; *figs. 1, 2, 3, natural size, remainder enlarged.*

PLATE 584.

PELARGONIUM BOWKERI, Harv. (Fl. Cap. Vol. II., p. 592.)

Nat. Order, GERANIACEÆ.

An herbaceous plant with thick branching or tuberous roots. Stem short, 2 to 3 inches long. Leaves, several, oblong to oblong-lanceolate in general outline up to 16 inches long, decompose, the ultimate segments linear-filiform, $\frac{1}{4}$ to 1 inch long, $\frac{1}{2}$ line wide, furrowed above, glabrous or pubescent. Stipules 0. Inflorescence exactly as in *P. Woodii* (No. 583), colour of flowers included.

Habitat: NATAL. Stony open slopes of Drakensberg mountains at Olivers Hoek, January 1886, *Wood*. Impendhle 5-6,000 ft. alt. *Wylie*. Helpmakaar, *Allanson*. Also in Transvaal, *Bowker*.

Living plants of this species and of *P. Woodii* were brought to the Botanic Gardens, Durban, by the writer in Jan. 1886, and some years later plants of both species were brought from Impendhle by the Curator, Mr. Wylie. In June 1886 *P. Bowkeri* flowered, and produced leaves, one of which was the abnormal one figured in the plate, several similar leaves have since been produced, but only this one was preserved.

In October 1911 I received from Mrs. Hesom, of Maritzburg, 3 of these abnormal leaves from a plant of *P. Bowkeri* which I had seen at the recent Flower Show, the largest of these leaves showed a still nearer approach both in size and cutting to those of *P. Woodii* as shown in the drawing, in each of the cases known to me the two species *P. Bowkeri* and *P. Woodii*, were growing in proximity to each other, and the only apparent difference between the inflorescence of these species is in the more scanty hairs on the pedicels and peduncles of *P. Bowkeri*, the pubescence of the leaves of this species varies greatly, we have seen specimens quite glabrous others very pubescent.

Fig 1, plant showing abnormal leaf; 2, leaf; 3, lobe of the leaf of the plant grown by Mr. Allanson at Maritzburg; 4, inflorescence; all natural size.



Pelargonium Bowkeri, Harv.



Mackaya bella, Harv.

PLATE 585.

MACKAYA BELLA, Harv. (Fl. Cap. Vol. V., Part I., p. 44.)

Nat. Order, ACANTHACEÆ.

A shrub with slender branches, bearing terminal racemes of conspicuous, very pale lilac flowers with purple veins and veinlets. Leaves opposite, petiolate, ovate-oblong to ob-lanceolate, with crenate, repand or obscurely toothed margins, tapering gradually to the petiole where they form very narrow wings; quite glabrous and dark green above, pale and dull beneath, 3-5 inches long, 1-1½ inch wide; petiole very short, compressed. Stipules 0. Inflorescence racemose, the racemes unilateral, 5-12-flowered. Bracts 2, opposite, deltoid-acuminate, 1 line long, pedicels short or none. Calyx ¼ inch long, 5-parted nearly to base, the segments linear-subulate; very minutely puberulous. Corolla tubular, compressed in lower half, then inflated and campanulate to throat, and a little laterally compressed, limb 5-lobed, upper lobe largest, the two lateral, and two lower much narrower, the whole corolla 1½ to 2 inches long, very pale lilac with purple veins. Stamens 4, inserted at throat, included, two of which are filiform and barren, the other two fertile; anthers linear, 2-celled, sagittate, pubescent outside. Pollen elliptical, with 3 pores, and 3 bands, which do not reach the poles. Style filiform, slender, exserted, bilobed at apex. Capsule 1½ to 1⅓ inch long, 4-seeded, clavate, subtended at base by the persistent calyx; seeds discoid, compressed rugose.

Habitat: NATAL. Tongaat, Sanderson, 167; Umvoti River, Adlam, (Herb. Normale Aust. Af. 240; Inanda, 1,800 ft. alt., Wood 1028.

The genus *Mackaya* contains this one species only, and is named after Dr. J. F. Mackay, author of the *Flora Hibernica*. *M. bella* is a handsome shrub, but it has no economic value, it is found only in the coast and midland districts of Natal, and does not seem to be very common. It is cultivated in Europe, having been introduced from Natal in 1869, and was figured in the *Botanical Magazine*, Plate 5797.

Fig. 1, calyx and bract; 2, corolla opened showing stamens; 3, anther, front view; 4, same, back view; 5, pistil; 6, longitudinal section of ovary; 7, capsule; 8, pollen grain; fig. 7, natural size, remainder enlarged.

PLATE 586.

BRACHYSTELMA FLAVIDUM, Schltr. (Fl. Cap. Vol. IV. Sec. 1, p. 846.)

Nat. Order, ASCLEPIADEÆ.

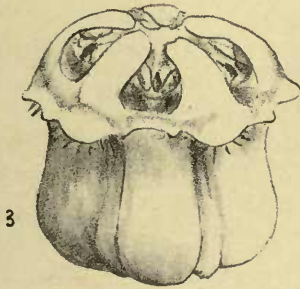
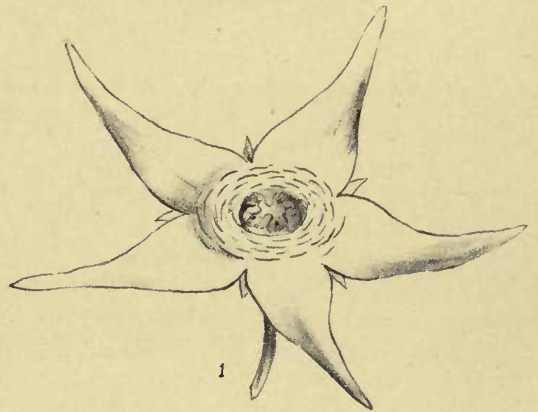
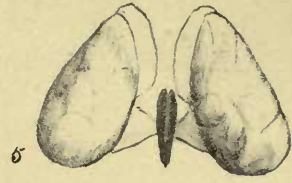
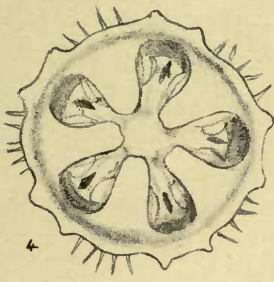
A slender tuberous rooted plant bearing greenish-yellow flowers. Tuber rotund, strongly compressed, 1 to 2 inches diameter, roots few, a little thickened. Stems several, branching, reaching to 2 inches in height, slender, puberulous, laxly leafy. Leaves few, opposite, subsessile, erect or at maturity horizontally spreading, lanceolate, acute, glabrous, 5 to 7 lines long, 1 to 2 lines wide. Inflorescence axillary, flowers few together at the nodes, pedicels filiform, 2 lines long, puberulous. Sepals 5, lanceolate, acuminate, 1 to $1\frac{1}{4}$ line long, puberulous. Corolla $2\frac{1}{2}$ lines long, 5-lobed to two thirds or more to base, glabrous, light yellow, lobes spreading, acuminate from a broad base. Corona lobes connate high up, each 3-lobed, the lateral lobes minute ciliate, the central larger, ligulate, incurved, obtuse, glabrous. Pollen masses ascending, solitary in each anther cell, pellucid on inner margin in upper portion. Follicles terete, lanceolate, 2 inches long, 1 to $1\frac{3}{4}$ line wide.

Habitat: NATAL. Fairfield, Alexandra County, 2,200 ft., alt. *Rudatis* 68.

Drawn from specimens in flower received from Mr. Rudatis October 1911, specimens with ripe follicles were afterwards received, but unfortunately too late to be shown in the drawing.

This plant has so far as known to us only been collected by Mr. Rudatis, and it would seem to be fairly common in the district where he is residing.

Fig. 1, flower; 2, calyx; 3, corona and staminal column; 4, same, seen from above; 5, pollen masses; 6, pistil; *all enlarged*.



M.F.

Brachystelma flavidum, Schltr.



M.F.

Brachystelma Barberiae, Harv.

PLATE 587.

BRACHYSTELMA BARBERIÆ, Harv. (Fl. Cap. Vol. IV., Section I., p. 864.)

Nat. Order, ASCLEPIADEÆ.

Tuber large, flattened; stems $2\frac{1}{2}$ to $3\frac{1}{2}$ inches high, rather coarsely spreading-pubescent. Leaves 1 to 4 inches long, $\frac{1}{3}$ to 1 inch broad, cuneate oblong to oblanceolate or obovate, acute to obtuse and apiculate, tapering below to the petiole, pubescent on both sides, but more coarsely so beneath. Flowers in opposite sessile umbels, forming a many-flowered ball, 3 to 4 inches in diameter surrounding the stem; pedicels $4\frac{1}{2}$ to 9 lines long, spreading-pubescent. Sepals 3 to $4\frac{1}{2}$ lines long, $\frac{3}{4}$ to 1 line broad at the base, thence tapering to the acute apex, pubescent. Corolla 1 to $1\frac{1}{2}$ inch long, cage-like, with the lobes connate at the tips, rich dark crimson-brown on the inner face, marked in the pale yellowish tube with irregular transverse purple-brown lines, outside pubescent, puberulous or glabrous and green; tube (exclusive of the spreading united part of the limb) about 2 lines long, subhemispheric, in dried flowers, from alteration in drying, appearing campanulate or cup-shaped and up to 4 lines long, glabrous within; limb around the mouth of the tube and base of the lobes covered with purple hairs; lobes $\frac{3}{4}$ to $1\frac{1}{2}$ inch long, $2\frac{1}{2}$ to 3 lines broad at the shortly ovate spreading base, then contracted into linear erectly incurved tails with replicate margins, varying from pubescent to glabrous on the inner face; outer corona cup-like $\frac{1}{2}$ line high, divided to half way down by 5 cut-like fissures into 5 truncate or subtruncate segments, often slightly produced into obtuse teeth at the shoulders, adnate at the middle to the base of the inner corona lobes, which are half line long, linear, obtuse, inflexed on the back of the anthers and not exceeding them, so that in the dried flowers the corona often appears to consist of 5 transverse subtruncate lobes with a linear obtuse point abruptly inflexed from their middle.

Habitat: NATAL. Slope of Inanda mountain, 2,500 ft. alt.; Cedara, 3,000 to 4,000 ft. alt. September, *Fisher* 126.

The Inanda specimen was gathered by the writer about the year 1879. The specimen was not preserved, but was sent to the late Mr. J. Sanderson, who failed to grow it, the Cedara specimen was sent to us by Mr. J. Fisher for identification, but had no tuber, the leaves were immature and very sparse, and the flowers were somewhat damaged, the specimen was not really a good one, though quite sufficient for identification, I have therefore taken Mr. Brown's excellent description entire from the *Flora Capensis* and will only add that from the recollection that I have of the plant collected so many years ago on the Inanda, it is a plant well worthy of cultivation.

Fig. 1, a flower; 2, calyx; 3, corona and staminal column; 4, same, seen from above; 5, corona lobe, back view; 6, same, side view; 7, anther; 8, style apex with anthers, seen from above; 9, pistil; 10, pollen masses; *fig. 1 natural size, remainder enlarged.*

PLATE 588.

BRACHYSTELMA FRANKSÆ, N. E. BROWN, nov. sp.

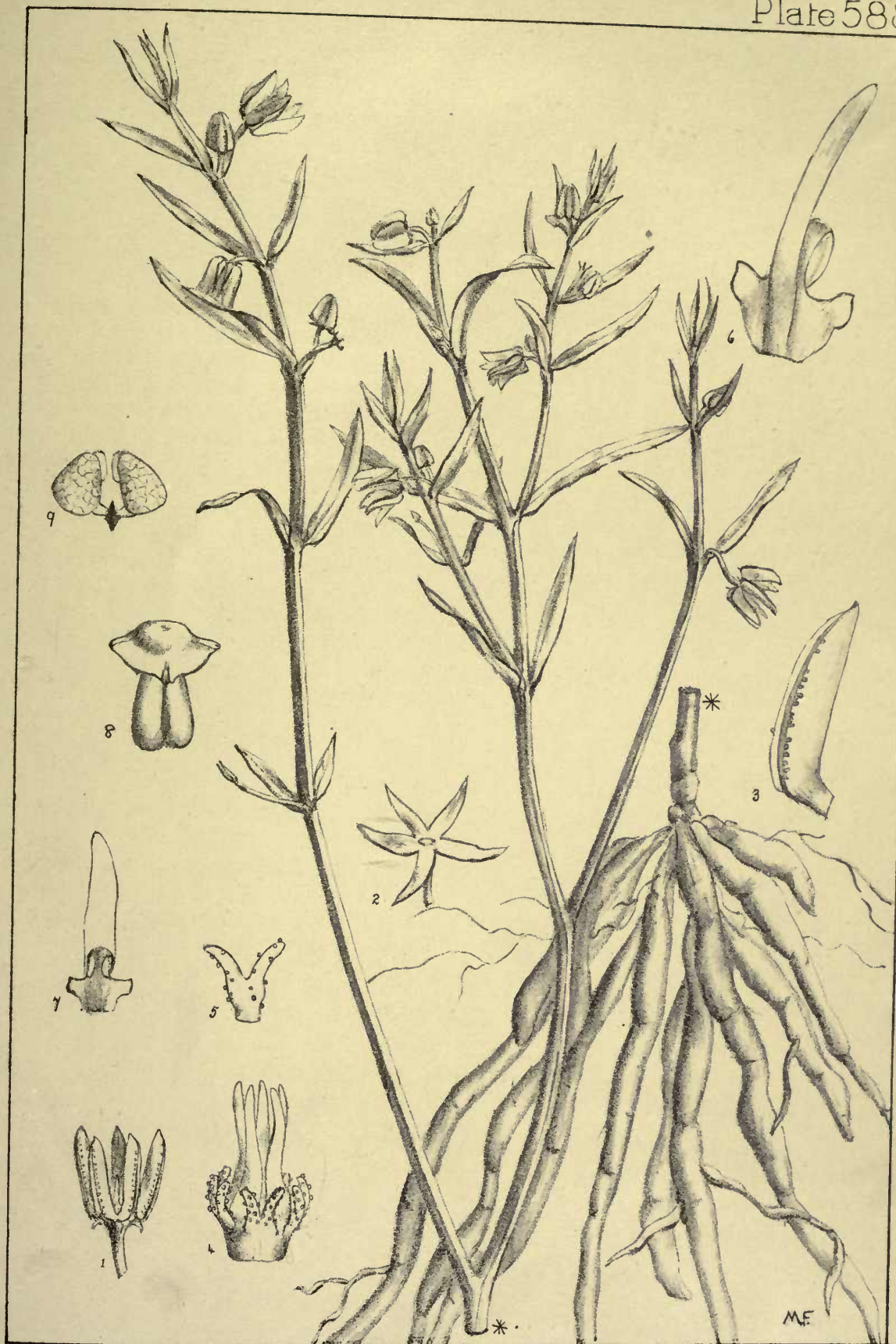
Nat. Order, ASCLEPIADEÆ.

A perennial branching herb, 6 to 10 inches high. Rootstock a cluster of thick fleshy more or less club-shaped roots. Stem erect, branching throughout from the base, 1 to $1\frac{1}{2}$ line thick, usually with a line of minute scattered hairs down one side, otherwise glabrous. Leaves opposite, spreading, $\frac{3}{4}$ to $1\frac{3}{4}$ inch long, $\frac{3}{4}$ to $2\frac{1}{2}$ lines broad, linear, subacute at the apex, shortly cuneate at the subsessile or very shortly petiolate base, minutely scabrous along the midrib beneath, and slightly scabrid-ciliate on the margins, otherwise glabrous. Flowers in pairs or sometimes solitary, lateral at the nodes. Pedicels 3 to 5 lines long, slender, glabrous. Sepals 1 line long, linear-lanceolate, acute, glabrous. Corolla rather more than $\frac{1}{4}$ inch long, 5-lobed nearly to the base, white tinged with pink, apparently dull purple when dried, ciliate on the basal half of the lobes with minute, but very stout or inflated, pink tinged hairs, otherwise glabrous, tube about $\frac{2}{3}$ line long, lobes erect, free, with their sides folded back so as to form an acute keel on the inner face when flattened out, 3 lines long, $1\frac{1}{2}$ line broad, oblong, acute; outer corona of 10 linear subobtuse teeth $\frac{1}{2}$ to $\frac{2}{3}$ line long, slightly curved towards each other in pairs, and at the same time slightly incurved, but without any indication of a twist, rough with minute papillae on the back and margins, white. Inner corona twice as long as the outer corona, consisting of 5, erect, flat, linear obtuse lobes, 1 to $1\frac{1}{4}$ line long, white.

Habitat: NATAL, near Camperdown, 2,000 ft. alt. *Miss Franks*, (Wood 11721).

"I have very much pleasure in dedicating this interesting species to its discoverer, Miss Millicent Franks, who has so ably assisted Mr. Medley Wood in his labours, and to whom we are indebted for many admirable drawings published in Natal Plants. It is closely related to *B. longifolium*, N.E.B., and it might possibly at a casual glance be mistaken for that species, but it is certainly distinct, differing in having smaller flowers, with shorter and proportionately much broader corolla-lobes, and may possibly differ in colour, the outer corona has stouter and more conspicuously papillate lobes, which are destitute of the peculiar half-twist characteristic of those of *B. longifolium*, and the inner corona-lobes are shorter than in that species."—N. E. Brown.

Fig. 1, flower; 2, calyx; 3, corolla lobe; 4, corona; 5, outer corona lobe; 6, inner corona lobe, and stamen; 7, same, front view; 8, pistil; 9, pollen masses; *all enlarged*.



Brachystelma Franksiae, .N.E.Brown.



Helichrysum calocephalum, Schltr.

PLATE 589.

HELICHRYSUM CALOCEPHALUM, Schltr. (Engl. Bot. Jahr. Vol. 12, p. 1, 1907.)

Nat. Order, COMPOSITÆ.

A dwarf herbaceous perennial with large and handsome flower heads which vary in colour from pure white to deep red. Rootstock woody, basal leaves oblanceolate-ligulate, acute at apex, gradually tapering to base, $2\frac{1}{2}$ to 4 inches long, 5 to 9 lines wide above the middle, clothed with white silky hairs on both surfaces. Flowering stems terete, 1-headed, densely white woolly, 7 to 10 inches high; stem leaves few, distant, oblanceolate-spathulate, sheathing. Heads solitary, large. Involucral scales in many rows, radiating, lanceolate, acute, glabrous and shining, much longer than the disk. Florets very numerous, reaching to about 2 lines long. Corolla glabrous, tubular cylindrical, 5-fid, the lobes triangular, obtuse, short. Stamens equalling the corolla, anthers linear, obtuse; pollen spherical with 3 stopples. Style filiform, glabrous, its branches subulate, truncate at apex. Pappus bristles subplumose, a little longer than the corolla. Achenes ellipsoid, glandular, glands sessile.

Habitat: NATAL. Fairfield, Alexandra County, 2,200 ft. alt. October, *Rudatis* 137 (1905); Liddesdale, near Howick, 4,000 to 5,000 ft. alt., December (1889), *Wood* 4251; Hilton Road, 3,000 to 4,000 ft. alt., October, *Miss Ritchie* (in *Herb. Wood* 9937); Zwaartkop, 4,000 to 5,000 ft. alt., November 1906, *Wylie* (in *Herb. Wood* 10,142); Benvie, Umvoti, 4,000 to 5,000 ft. alt., September 1906, *Wylie* (in *Govt. Herb.* 10,801); also *Baur* 547, teste Kew.

This plant belongs to the Section *Elegantissima*, and comes very near to the Cape *H. marginatum* D.C., of which we have only one rather poor specimen collected by the late Dr. Bolus many years ago; from the description in the *Fl. Capensis* of this plant *H. calocephala* would seem only to differ by its more silky and larger leaves, larger flower heads, and differently coloured involucral scales. It is a very handsome plant and is well worth cultivation.

Fig. 1, female floret; 2, perfect floret; 3, pappus bristle; 4, three stamens; 5, pollen grain; 6, style and stigma; all enlarged.

PLATE 590.

RHAMNUS ZEYHERI, Sond. (Fl. Cap. Vol. I., p. 477.)

Nat. Order, RHAMNÆ.

A small unarmed tree, bark grey, quite glabrous, branches opposite or sub-opposite. Leaves simple, petiolate, elliptical or oblong, 1 to 2 inches long, up to 1 inch wide, acute at apex, rounded to petiole, quite entire, glabrous, dark green above, lighter and subglaucous beneath; midrib rather prominent beneath, and reddish in young leaves, with 5 or 6 lateral veins on each side. Stipules small and evanescent; petioles 2 to 3 lines long a little swollen at base. Flowers few together in the axils, greenish-yellow; peduncles capillary, glabrous, 3 to 5 lines long. Calyx 1 line long, 5-cleft two-thirds of the way down, lobes deltoid, acute. Corolla of 5 obovate-emarginate petals which equal the calyx lobes in length, their margins incurved. Stamens 5, opposite the petals, anthers ovate, 2-celled. Disk bluntly 5-lobed, thin, closing mouth of the calyx. Ovary free, 2-celled, cells 1 ovuled, styles 2, free, stigmas subcapitate. Fruit not seen.

Habitat: NATAL. Port Shepstone, 100 to 200 ft. alt. September, (leaves only) *W. Bazley* (in Government Herbarium, 10,798); Camperdown, 2,000 ft. alt. November, *Miss Franks* (in flower), *Wood* 11,944.

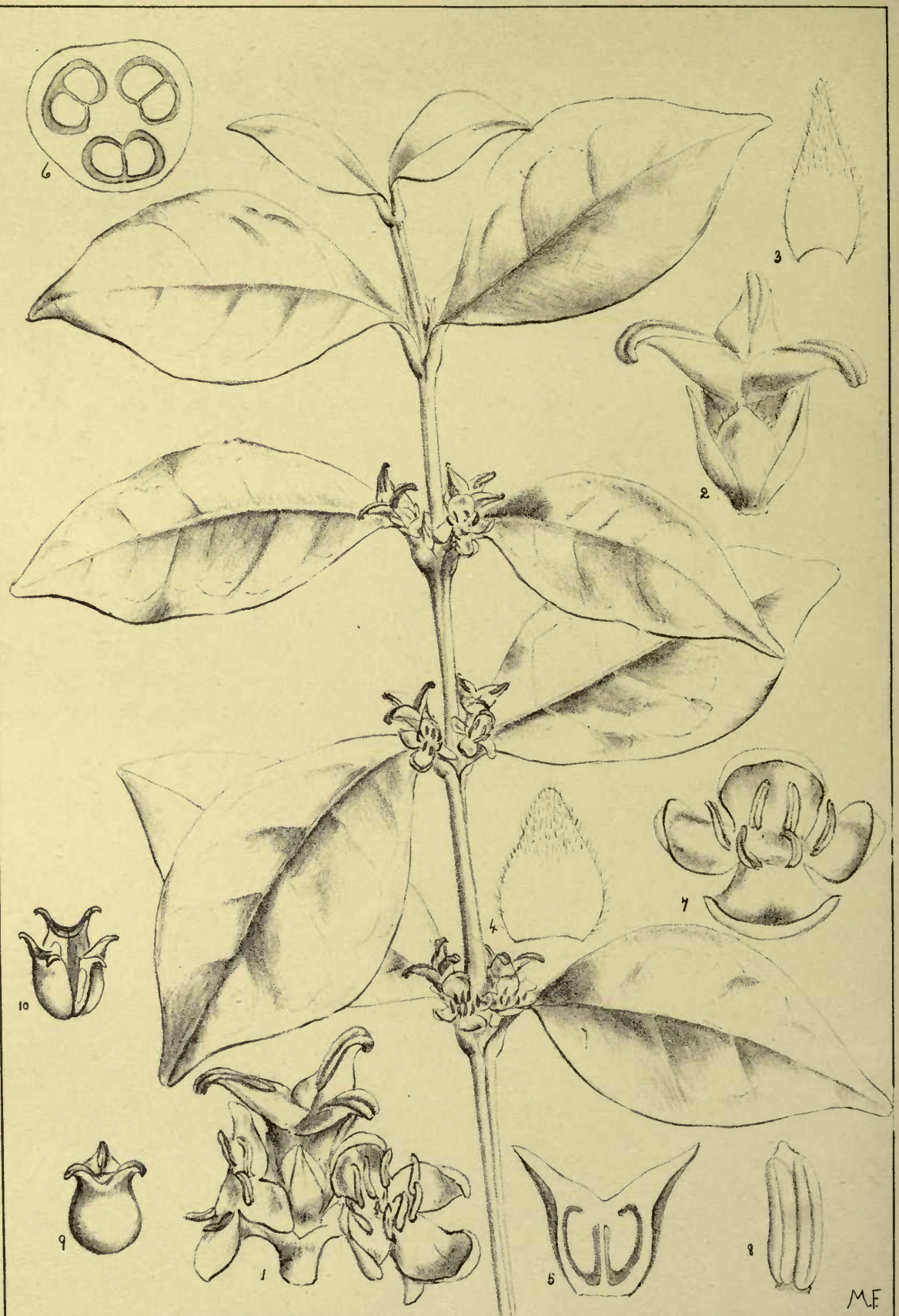
Also Magaliesberg, Transvaal, *Zeyher* 316. November.

This tree produces the well known "Red Ivory wood," of which Mr. Fourcade says in his "Report on the Natal Forests," "wood heavy, hard not elastic, colour light coral red, the thin sapwood nearly white; takes a handsome polish, and is prized for fancy work and turner's work." Mr. Fourcade gives the native name as umNini, Mr. Bazley as umGologoti, most likely one is the name by which it is known in the coast the other in the upper districts. The tree is not common, and the wood is scarcely large enough to be of much value.

Fig. 1, flower; 2, longitudinal section of same; 3, petal; 4 stamen, back and front view; *all enlarged*.



Rhamnus Zeyheri, Sond.



Notobuxus natalensis, Oliver.

PLATE 591.

NOTOBUXUS NATALENSIS, Oliver. (Ic. Plan. XIV., 78, t. 1400 (1882).)

Nat. Order, EUPHORBIACEÆ.

A slender glabrous undershrub, 4 to 6 feet in height. Leaves opposite, petiolate, elliptical, obtuse or obtusely acuminate, 2 to 4 inches long, $\frac{3}{4}$ to 2 inches wide, smooth, dark green and shining; petiole 3 to 6 lines long. Flowers monoecious, green, fasciculate in axils of the leaves. *Male flowers.* Perianth 4-parted to base, the segments decussate, oblong, obtuse, dark green, the lateral ones more or less boat-shaped, exterior in æstivation. Stamens 6, one opposite each of the lateral segments, two opposite the front, and two opposite the back segments, all subsessile; anthers oblong, dehiscing longitudinally. Ovary O. *Female flowers.* Perianth similar to the male; Stamens O; ovary ovoid, glabrous, 3-celled, cells 2-ovuled, ovules pendulous; styles 3, divergent, stigmatose on inner surface. Fruit capsular, capsules loculicidally 3-valved, valves 2-horned.

Habitat: NATAL. In shady wood Inanda, 1,800 ft. alt. *Wood* 1357, September; in light shade Bluff, near Durban, 2-300 ft. alt. September to December, *Wood* 11,946, "previously collected without expanded flowers by Mr. T. Cooper (1862), Tongaat No. 3468."

The genus *Notobuxus* as far as at present known is represented by this one species only, and so far has only been found in the coast districts of South Africa from the Kei to Natal. Mr Sim in his *Forest Flora* says of it: "A small tree usually only of wattle size, but occasionally up to 30 feet in height, and 1 foot in diameter. * * * and Mr. Carlson, District Forest Officer, Butterworth, writes: only grows along the coast, produces our best wattles for straightness, strength and resistance against insect borer. Mr. Sim also says, the wood is like the Cape Box in colour and texture, very close grained."

Professor Oliver, who described the genus, says: "This plant is entirely *Buxus*, except in the two additional stamens, and total absence of any rudiment of a gynœcium in the male flowers, thus forming a transition to the genera *Simmondsia* and *Styloceras*."

The plant is not uncommon in the bush on the top of the Bluff, and it will be noticed that the capsule before dehiscence appears to be 3-horned, but after opening, it will be seen that each valve is 2-horned, making 6 in all.

Fig. 1, cluster of male and female flowers; 2, female flower with bracts, 3, bract, inner view; 4, perianth lobe, inner view; 5, longitudinal section of ovary; 6, cross section of same; 7, male flower; 8, stamen; 9, capsule before dehiscence; 10, same after dehiscence; figs. 9 and 10 *natural size, remainder enlarged*.

PLATE 592.

CEROPEGIA CAFFRORUM, Schltr. (Fl. Cap. Vol. IV., Sec. 1., p. 823.)

Nat. Order, ASCLEPIADEÆ.

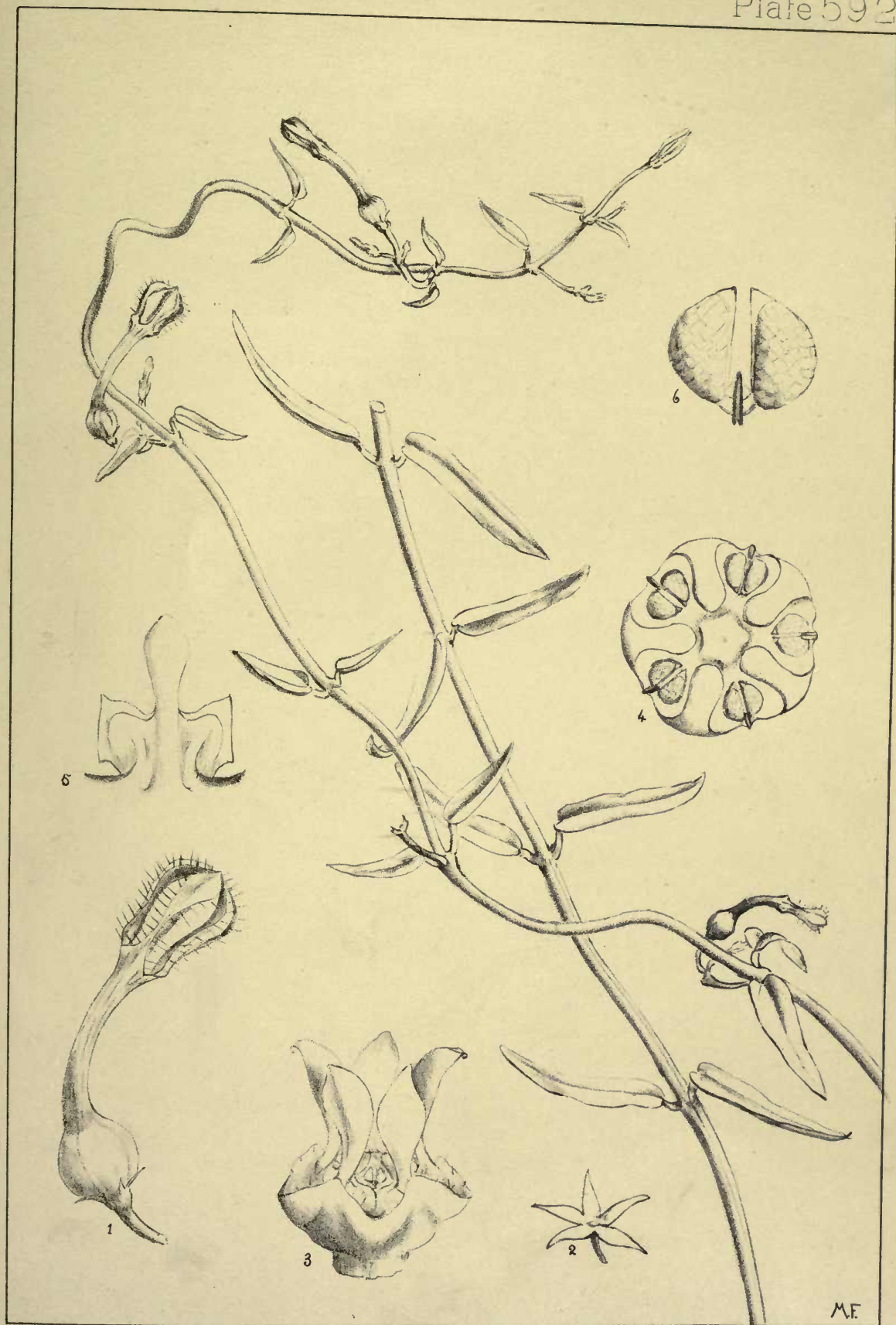
Stem twining, filiform, glabrous, sometimes several feet long, occasionally branched. Leaves opposite, distant, the pairs 1 to 2 inches apart, spreading or deflexed, thick and fleshy, linear to ovate-lanceolate, channelled on the upper side, lighter coloured and with faint central green line beneath, reaching to 16 lines long, 2 to 3 lines broad, acute at apex, rounded to subcordate at base; petiole $1\frac{1}{2}$ to 3 lines long, usually curved. Peduncles lateral on the slightly swollen nodes, $\frac{1}{4}$ to $\frac{1}{2}$ inch long, 2 to 5-flowered, glabrous; bracts minute; flowers developing successively; pedicels $\frac{1}{8}$ to $\frac{1}{4}$ inch long; sepals 1 to $1\frac{1}{4}$ line long, lanceolate-subulate with very acute recurved tips, glabrous. Corolla tube 7 to 8 lines long, ovoid-inflated and (in dried flowers) 1 to $1\frac{1}{2}$ line diameter at the base, cylindric above and scarcely, or but slightly widened at the mouth, glabrous and green with purple lines outside, thinly covered with very fine long hairs within; lobes 3 to $3\frac{1}{2}$ lines long, straight, connivent-erect, connate at the enlarged tips, linear-spathulate, replicate, blackish-purple, ciliate throughout with short dark purple or violet hairs, otherwise glabrous; outer corona with pouch-like entire lobes alternating with the anthers, much shorter than the staminal column, but rising to its top behind the inner corona-lobes in deltoid-ovate obtuse lobes, glabrous; inner corona-lobes connivent-erect high above the staminal column, or sometimes connate into a column $\frac{3}{4}$ to 1 line long, spathulate-lanceolate, flat with recurved or hooked tips, glabrous.

Habitat: NATAL. Berea, near Durban, 150 ft. alt. Feb., Wood 5376, *var dubia* N.E.B. Delagoa Bay, Mrs. Monteiro, and cultivated at Kew.

The specimen from which the drawing was made, and the first part of the description written was taken from some plants growing in tins in the Botanic Gardens, and also from stems and leaves from the place where the plant was originally found, but after waiting for some weeks no more flowers, and no follicles could be found, the latter and principal part of the description was therefore taken from the Flora Capensis.

So far as known to us this plant has only been observed in the locality where it was first found by the writer, but a variety of it has been gathered by Mrs. Monteiro near Delagoa Bay.

Fig. 1, flower; 2, calyx; 3, corona and staminal column; 4, staminal column seen from above; 5, anther; 6, pollen masses; *all enlarged*.



Ceropegia cafrorum, Schltr.



Portulaca caffra, Thb.

PLATE 593.

PORTULACA CAFFRA, Thb. (Fl. Cap. Vol. I., p. 385, sub *Talinum*.)

Nat. Order, PORTULACACEÆ.

A perennial fleshy herb with tuberous rootstock and yellow flowers, sometimes, perhaps always, several stemmed. Stems simple or branched, 6 to 12 inches high, terete, ascending, glabrous. Leaves alternate, exstipulate, petiolate, linear-lanceolate, or ob-lanceolate, acute, tapering gradually to the petiole, glabrous, $\frac{1}{2}$ to $1\frac{1}{2}$ inch long, 2 to 4 inches wide, petiole 1 to $2\frac{1}{2}$ lines long. Peduncles solitary, as long, or longer than the leaves, swollen at apex, bracteate about two-thirds above the base. Sepals 2, ovate, shortly acuminate, 2 lines long, petals 5, ovate, acute, longer than the sepals. Stamens 15 to 30, inserted at base of calyx, and shorter than the petals. Ovary sessile, free, 1-celled, many ovuled. Style filiform, 3-fid at apex. Capsule 3-valved, many seeded, seeds sub-compressed, concentric, striated, black.

Habitat: NATAL. Stony hill Inanda, 1,500 ft. alt. October, Wood 1372; Camperdown, 2,000 ft. alt. November Miss Franks (Wood 11,945.)

The order Portulacaceæ is but a small one, containing according to the Genera Plantarum less than 130 species, of which about 16 or 18 belong to the genus *Portulaca*, the only plant of any importance in the Order is *Portulaca oleracea*, the common "Purslane" which was formerly cultivated in Europe as a pot-herb, and thought to have diuretic properties, but is now I think seldom seen in cultivation. The plant above described was formerly known as *Talinum caffrum*, E. & Z., but has lately been moved to the genus *Portulaca*.

Fig. 1, calyx; 2, flower, two of the petals removed; 3, stamens, back and front view; 4, pistil; 5, cross section of ovary; 6, capsule; 7, seed; all enlarged.

PLATE 594.

THUNBERGIA ATRIPLICIFOLIA, S. Mey. (Fl. Cap. Vol. V., Sect. 1, p. 7.)

Nat. Order, ACANTHACEÆ.

An herbaceous perennial with several stems which are sub-erect or decumbent from a woody root, often branched, densely and patently hispid with whitish hairs, 6 to 24 inches long. Leaves ovate, entire, acute, 1 to 2 inches long, $\frac{3}{4}$ to 1 inch wide, rounded and 3 to 5-veined at base, veins and veinlets distinct, hispid like the stem, the lower pairs distant, 3 to 4 inches apart, upper ones closer; petioles very short, 0 to $\frac{1}{8}$ inch. Flowers axillary on lengthening pedicels which finally in fruit reach to 3 inches or more in length. Bracteoles 2, elliptic, obtuse, rounded at base, pilose, 8 to 9 lines long, 4 to 5 lines wide. Calyx very much smaller than the bracteoles, cut into about 12 linear whitish teeth which are longer than the cup-shaped tube. Corolla gamopetalous, oblique, the tube about $\frac{3}{4}$ inch long, the limb 5-lobed spreading to 1½ inch wide, cream coloured. Stamens 4, didynamous included, anthers 2-celled, usually 6 of the 8 cells spurred at base, margined with moniliform hairs, the connective produced in a short horn. Style longer than the stamens, 2 lobed, the lobes funnel-shaped, one at the apex, the other much below it. Capsule globose, rostrate, 2-celled, cells 2-seeded.

Habitat: NATAL. Inanda, 1,800 ft. alt. Wood 42; 90; also *Grant*; *Gerrard* 220.

Also in Cape Colony and Transvaal.

Of this genus three species have already been described in this work, viz.: *T. alata*, Bojer; *T. Dregeana*, Nees in Vol. III., and *T. pondoensis*, Lindau, in Vol. IV., these three plants are all climbers, while the stems of *T. atriplicifolia* are either quite erect or more or less decumbent, it is common all over the colony, and is popularly known as the "Natal Primrose." The leaves of one species of Thunbergia are used by the natives in Cape Colony with other leaves as a remedy for scrofulous swellings (Andrew Smith, M.A.), and the leaves of *T. atriplicifolia* are much used by the natives and Indians in Natal to make a wash for the hair, the native name of the plant is isi-Pondo.

Fig. 1, calyx; 2, stamens; 3, disk and pistil; 4, cross section of ovary; 5, capsule; 6, vertical section of same; *all enlarged*.



M.F.

Thunbergia atriplicifolia, E. M.



Buphane disticha, Herb.

PLATE 595.

BUPHANE DISTICHA, Herb. (Fl. Cap. Vol. 6, p. 242.)

Nat. Order, AMARYLLIDÆ.

Bulb ovoid, 2 to 3 inches diameter (in our specimens) with a large number of tunics, the outermost dark in colour, and firmer in texture than the others, the inner lighter in colour, semitransparent, veiny and of very delicate texture. Leaves 8 to 16, distichous, erect, linear, coriaceous, sub-glaucous, more or less spirally twisted, gradually narrowed to the apex, 12 to 18 inches long, margins smooth and semitransparent. Peduncles stout, compressed, ancipitous, light green, sub-glaucous, equalling or exceeding the leaves. Flowers very numerous, pink, in a dense umbel, with two opposite spathe-valves which are triangular acuminate, $1\frac{1}{2}$ to 3 inches long. Pedicels 2 to 4 inches long. Corolla gamopetalous 2 to $2\frac{1}{2}$ inches long, a little swollen in upper portion, limb 6-cleft, segments linear $\frac{3}{4}$ to 1 inch long. Stamens 6, inserted at throat of perianth, and a little longer than its segments; filaments filiform, pink; anthers oblong, versatile, white. Ovary triangular in section, 3-celled, cells 2 to 4-seeded; style simple, curved, a little longer than the stamens, red; capsules turbinate, loculicidally 3-valved.

Habitat: NATAL. Inanda, 1,800 ft. alt. Wood 1401, September; Clairmont, 10 to 30 ft. alt. Wood 1584; same locality December, Wood. Also Drakensberg, Bolus 2834, Cape Colony and Transvaal. Extends to Angola (*Welwitsch*) and the mountains round Lake Nyassa (*Thompson*) and Lake Tanganyika (*Cameron*).

The genus *Buphane* includes 3 species only, all African, the other two species *B. longipedicellata* and *B. ciliaris* being confined to Cape Colony. This plant was introduced into Europe in 1774, and is often found in catalogues as *Brunsvigia toxicaria*, or *Buphane toxicaria*, but the name here given is the correct one. The flowers are ornamental, but it may not be generally known that the plant is more or less poisonous, as it contains a substance nearly related to both brucine and strychnine, "differing, however from both in its chemical reaction." (C. F. Juritz, M A., in Transactions of the S.A. Philosophical Society, Vol. XVI., part 2, 1905) the writer has frequently seen these flowers in the possession of children and has taken the opportunity of warning them as to its poisonous properties, but it must be remembered that it was the bulb only that was carefully examined, not the leaves or the flowers so far as we are aware, but after the careful tests made by Mr. Juritz it is safer to regard the whole plant as poisonous, especially when handled by children.

Fig. 1, bulb, base of leaves and peduncle; 2, leaf; 3, inflorescence; 4, perianth opened showing stamens; 5, anther; 6, cross section of ovary; *figs. 1, 2, 3 natural size, 4, 5, 6 enlarged.*

PLATE 596.

SOLANUM PANDURÆFORME, E.M. (Fl. Cap. Vol. IV., Sec. 2, p. 99.)

Nat. Order, SOLANACEÆ.

A small much branched undershrub, bearing few, or many short spines, which are subulate from a broad base and 1 to 2 lines long. Stem and branches terete, densely stellate pubescent. Leaves alternate, exstipulate, petiolate, oblong-lanceolate, margins entire, more or less sinuate; up to $4\frac{1}{2}$ inches long, by $1\frac{1}{4}$ inch broad, acute at apex, long tapering to petiole, stellate pubescent on both surfaces, densely so on the lower surface, occasionally with a few spines on the midrib beneath; petiole $\frac{1}{2}$ to $\frac{3}{4}$ inch long. Inflorescence extra-axillary, in few flowered cymes, the lowest flower only fertile. Calyx more or less deeply 5-lobed, lobes obtuse; 3 to $3\frac{1}{2}$ lines long, stellato-pubescent externally. Corolla pink or purple, 5-parted stellato-pubescent externally, lobes 3 to $4\frac{1}{2}$ lines long, oblong-lanceolate, acute, with a few minute hairs on the midrib inside. Stamens 5, filaments 1 line long, anthers three lines long, dehiscing by two small pores, one at apex of each cell. Ovary ovoid, hirsute at apex. Style 5 lines long, thickened upwards; stellately pubescent at base; stigma small obtuse. Fruit a globose yellow berry, 8 to 10 lines diameter, smooth, glabrous.

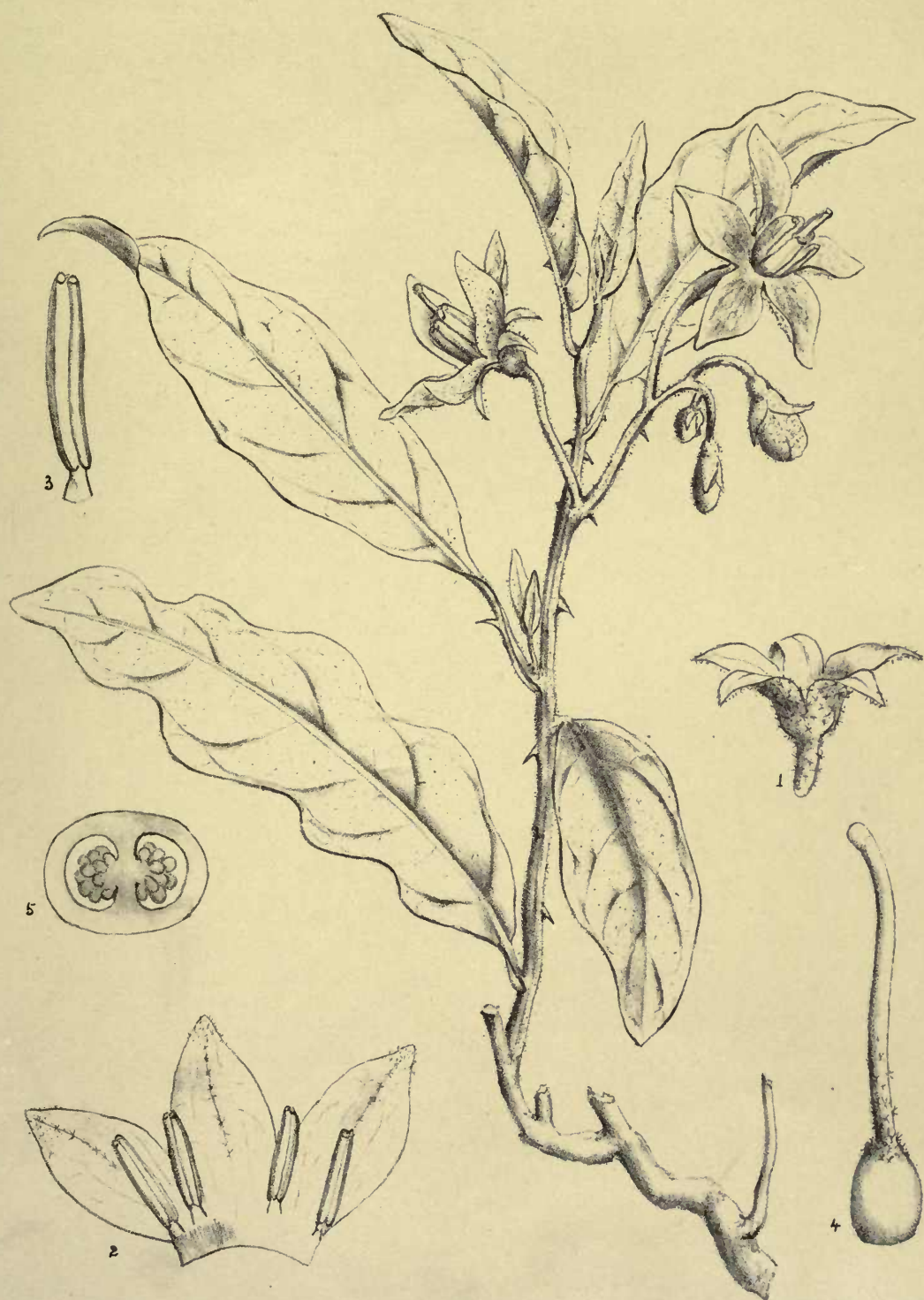
Habitat: NATAL. Near Umlazi River, 1,800 ft. alt. Wood 1831, April; near Camperdown, 2,000 ft. alt., Miss Franks; between Maritzburg and Greytown, Wilms 2166; near Durban, Krauss 102; and without precise locality, Gerrard 52.

Also in Cape Colony and Tropical Africa.

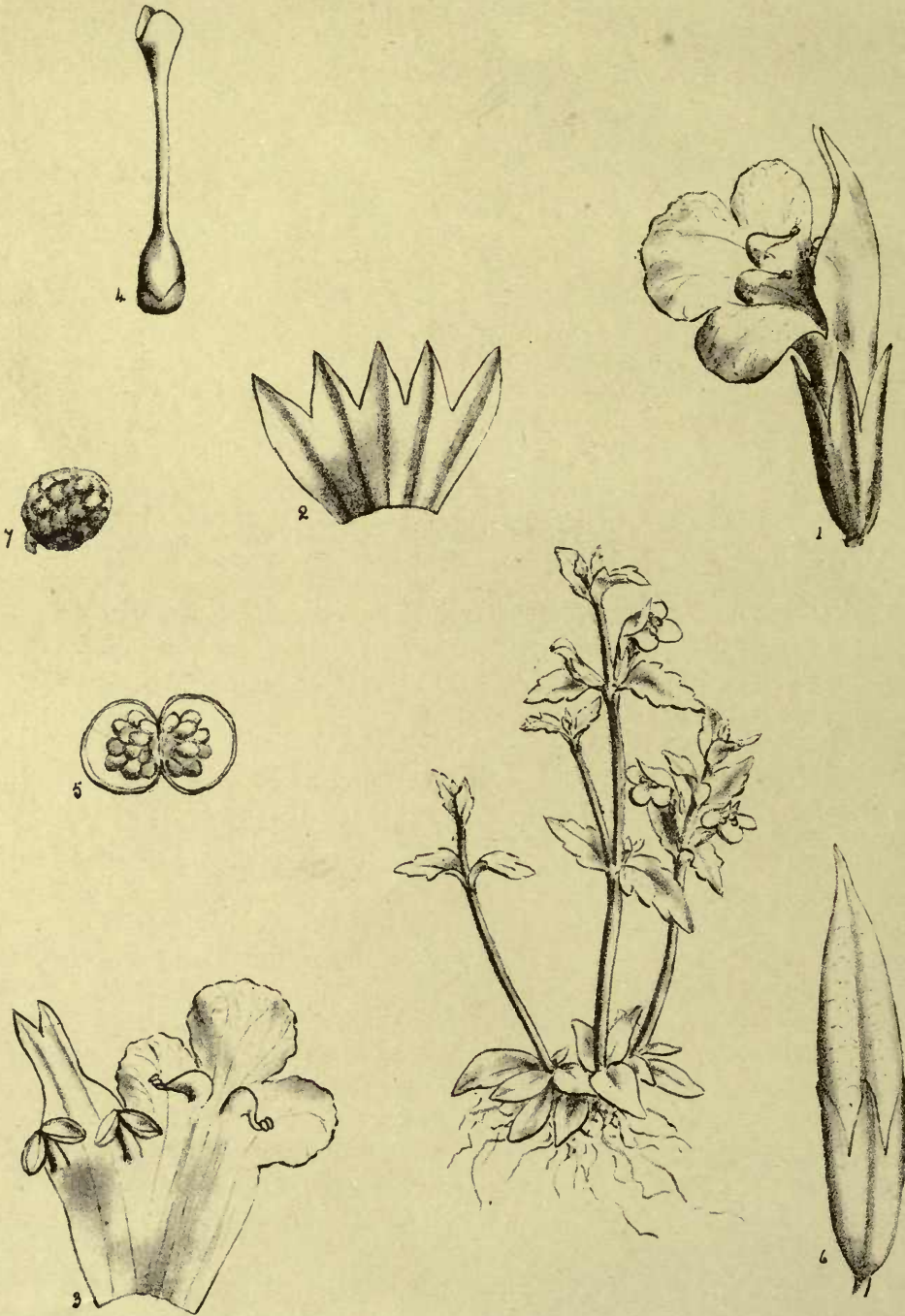
This plant is not uncommon in the midland and upper districts, the cutting of the calyx is worth notice, it is sometimes very deeply lobed, and sometimes almost entire, both forms, occasionally, perhaps always appearing on the same plant.

There would also appear to be some discrepancy as to the colour of the flowers, as in the Flora Capensis after the word "pink" appears (Wood). My specimen was gathered in 1883. I have referred to my note book and find, that I noted at the time that the flowers were pink, in the specimens gathered by Miss Franks in 1911 she has noted "flowers purple," and on a sheet in the Herbarium which contains a specimen gathered by Mr. Legge in 1904, it is stated "flowers yellow."

Fig. 1, calyx; 2, portion of corolla opened, showing stamens; 3, stamen; 4, pistil; 5, cross section of ovary; *all enlarged*.



Solanum panduraeforme, E.M.



MF

Ilysanthes nana, Engler.

PLATE 597.

ILYSANTHES NANA, Engler. (Fl. Cap. Vol. IV., Sect. II., p. 365.)

Nat. Order, SCROPHULARIACEÆ.

An erect herb, solitary or tufted. 1 to 4 inches high, roots many, fibrous. Stems slender, quadrangular, minutely and densely glandularly pubescent, often branched, the branches divaricately ascending. Leaves, the basal ones few, rosulate, petiolate, the stem leaves opposite, sessile or subsessile, the basal entire or subentire, obovate, tapering to base, $\frac{1}{4}$ to $\frac{1}{2}$ inch long, soon withering, the upper ones in 2 to 8 pairs, $\frac{1}{8}$ to $\frac{1}{2}$ inch long, ovate or elliptical, tapering to base, variously cut or toothed, occasionally subentire, sometimes purplish beneath. Flowers axillary, shortly pedunculate, solitary (in all our specimens). Calyx 5-lobed, lobes deltoid, 1 to $1\frac{3}{4}$ line long. Corolla 2 to 3 lines long, bilabiate, pinky-white. Fertile stamens 2, included, filaments filiform, anthers 2-celled, cells divergent; staminodes 2, gibbous at base, without anthers. Capsule oblong, acute, septicidal, many seeded, seeds longitudinally ribbed, the ribs minutely tuberculate.

Habitat : NATAL. In crevices of rocks and in masses of *Selaginella rupestris*, Umzinyati Falls, *Wood* 1244; similar situations Inanda, 1,500 ft. alt., Feb., *Wood* 1603; slopes of Drakensberg, 4,000 to 5,000 ft. alt., Jan., *Wood* 3914; Camperdown, 2,000 ft. alt., amongst rocks on banks of Umlazi River, Nov., *Miss Franks*; Umlazi, *Schlechter*, 6734.

Also in tropical Africa.

The genus *Ilysanthes* includes only about 12 species, natives of America, E. Indies, Tropical and South Africa, and Europe, four species have been credited to Natal, two only of which are known to us, viz., *I. riparia*, *Rafin*, an insignificant trailing plant usually found in very moist places, and *I. nana*, which is probably one of the smallest of the species, and is usually found in crevices of rocks, or in moist soil where it probably attains its largest size, since in the *Flora Capensis* it is said to reach 4 inches in height, but we have never seen it more than $2\frac{1}{2}$ inches. It is of no economic value, and the natives do not appear to have any distinctive name for it. The quotation in the *Flora Capensis Wood* 885 is an error.

Fig. 1, flower; 2, calyx opened; 3, corolla opened; 4, pistil; 5, cross section of ovary; 6, capsule; 7, seed; all enlarged.

PLATE 598.

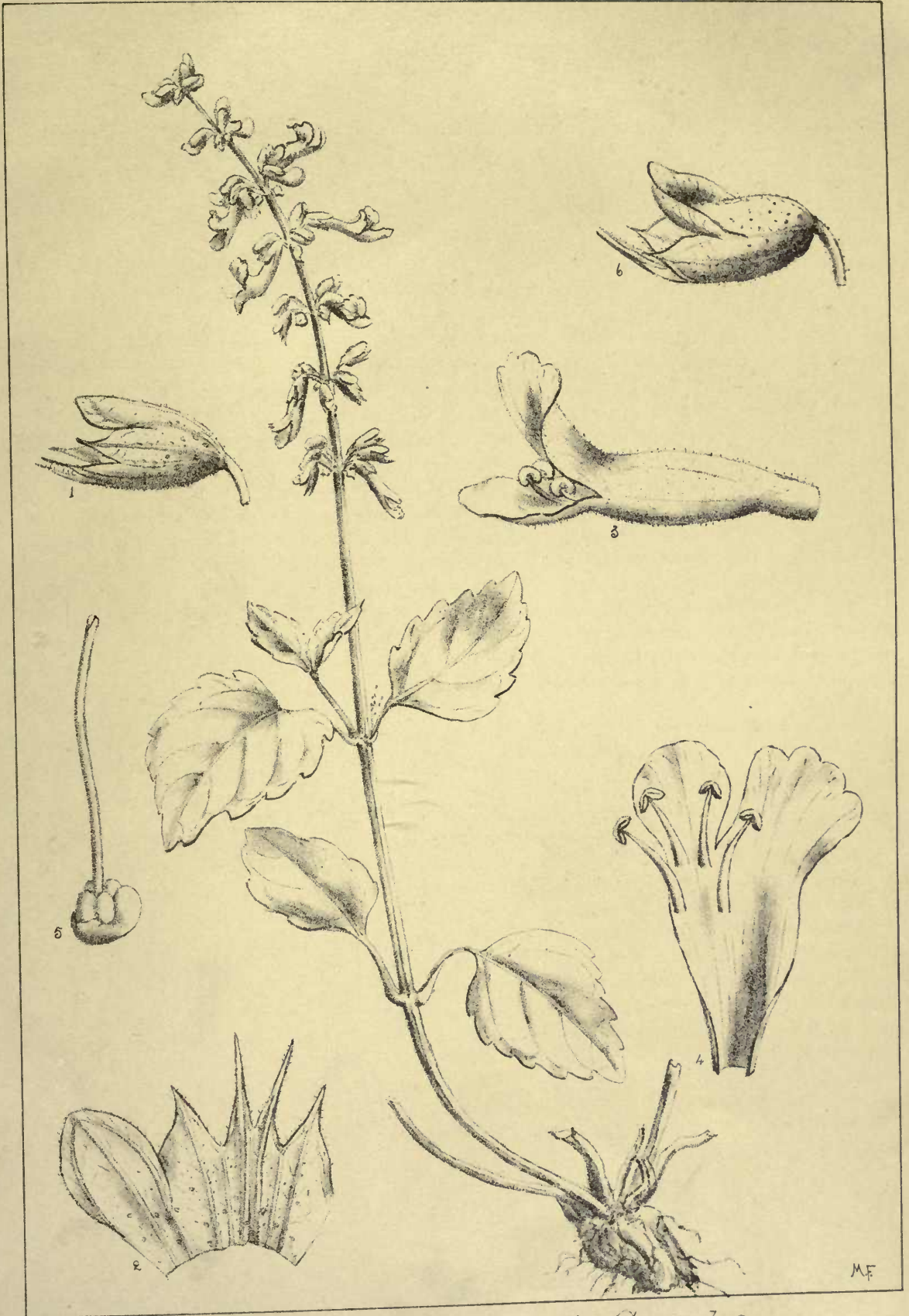
ORTHOSIPHON WILMSII, Guerke. (Fl. Cap. Vol. V., Sect. II., Part II., page 255.)
Nat. Order, LABIATÆ.

A perennial plant 6 to 12 inches in height. Stems simple or branched, many from a woody rootstock, quadrangular, puberulous with minute white curved hairs. Leaves opposite, spreading, petiolate, exstipulate, ovate to ovate-lanceolate, tapering gradually to the petiole, sharply and irregularly serrate or subentire, gland dotted, minutely pubescent on the veins beneath, and sparsely ciliate with similar hairs; blades $\frac{1}{2}$ to $1\frac{1}{4}$ inch long, 3 to 8 lines wide; petiole 1 to 5 lines long, puberulous like the stem. Inflorescence racemose, the racemes terminal on the stems and branches, $1\frac{1}{2}$ to 5 inches long, the whorls $\frac{1}{2}$ to $\frac{3}{4}$ inch apart, 6-flowered; bracts ovate, acute, or apiculate, $\frac{3}{4}$ to $1\frac{1}{2}$ line long, purplish, sessile or minutely stalked, margins minutely ciliate, otherwise glabrous. Pedicels $1\frac{1}{2}$ to 2 lines long, minutely pubescent. Calyx gamosepalous, densely pubescent externally, purplish, 5-toothed, the upper tooth much the largest, tube subcampanulate, many-nerved, the upper tooth ovate, obtuse, lateral ones shortly acute, lower pair acuminate, longer than the others, the whole calyx 2 to 3 lines long, lengthening in fruit. Corolla 2-lipped, much longer than the calyx, upper lip entire, lower 4-fid, densely pubescent. Stamens 4, included, the upper pair inserted at throat, lower pair at base of lower lip; anthers 1-celled, style filiform, minutely bi-fid.

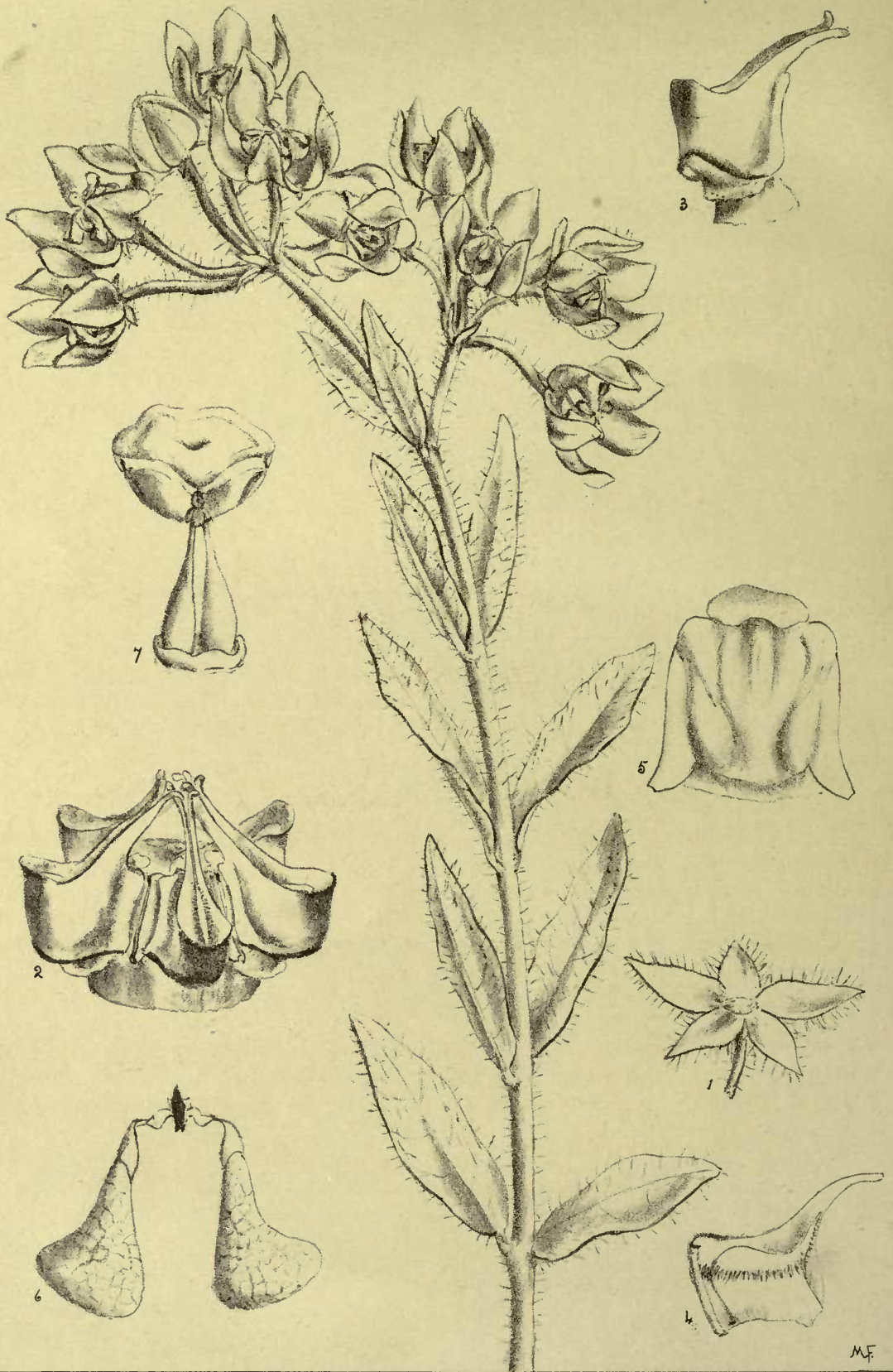
Habitat: NATAL. Sydenham, 500 ft. alt. September, *Wood* 8538; Camperdown 2,000 ft. alt. November, *Wood* 4963; same locality, *Miss Franks* in *Herb. Wood* 11972.

The genus *Orthosiphon* includes more than 150 species natives of Tropical and South Africa, Madagascar, Socotra, Arabia, the Malay Archipelago and Australia, and are annual or perennial herbs. In South Africa we have 28 species, nine of which have been found in Natal. In the Flora Capensis 29 species have been described, but it has since been found that *O. concinnus*, Berg, is identical with *O. Wilmsii*, here described, specimens of both are in our herbarium, the fact of the species being identical was suspected by Mr. N. E. Brown at Kew, and was afterwards confirmed by the discovery here of a specimen of *Wood's* 4963, collected near Camperdown in 1893, and a fresh collection of the plant by Miss Franks in 1911.

Fig. 1, calyx; 2, same, opened; 3, corolla; 4, same, opened; 5, disk and pistil; 6, fruiting calyx; *all enlarged*.



Orthosiphon Wilmsii, Guerke



Asclepias cultriformis Harv.

PLATE 599.

ASCLEPIAS CULTRIFORMIS, Harv. (Fl. Cap. Vol. IV., Sect. I., p. 698.)

Nat. Order, ASCLEPIADEÆ.

Stems several, simple, erect or ascending, 6 to 12 inches in height, thinly pilose with white cellular hairs. Leaves opposite, petiolate, ascending, linear-oblong, lanceolate to ovate-lanceolate, quite entire, obtuse or acute, rounded or sub-cordate at base, midrib prominent beneath, lateral veins pinnate, but indistinct; pilose on upper surface, scantily so beneath, and ciliate with similar but shorter hairs like those on the stem; 1 to 2 inches long, 3 to 7 lines broad, petiole $1\frac{1}{2}$ line long. Umbels terminal solitary, with 1 to 3 solitary from the uppermost nodes, 3 to 10-flowered; peduncles $\frac{1}{2}$ to 1 inch long, pilose like the stem; bracts linear-subulate, 3 lines long, ciliate, dark brown. Calyx 5-parted, the lobes lanceolate, acute, 2 to 4 lines long, hairy. Corolla 5-parted, the lobes dull purplish, ascending, ovate, acute, thinly hairy on both surfaces, ciliate, 5 to 7 lines long, 4 to 6 lines wide. Corona lobes 5, white with violet tips and a small violet spot on back near the base, laterally compressed, cucullate, angles of the sides produced into long subulate acute teeth, which are inflexed over the top of the staminal column. Follicles not seen.

Habitat: NATAL. Dargle, *Fannin*, 85; Howick, *Mrs. Hutton*; Inanda, 1,800 ft. alt., *Wood* 405; *Sanderson* 291; Zululand, *Gerrard* 1296; Camperdown, 2,000 ft. alt., *Miss Franks* (*Wood* 11973.) Flowering December to March.

Also in Transvaal, various collectors.

Two other species of this genus have been described and figured in this work, viz., *Gomphocarpus physocarpus* in Vol. III., p. 217, and *Asclepias peltigera*, plate 559 of this volume. Up to the time of the revision of the Order Asclepiadeæ in the Flora Capensis these species with many others were included in a genus known as *Gomphocarpus*, but as it was found that the genus could no longer be maintained as distinct from the older genus *Asclepias* it was abolished, and its species for the most part transferred to *Asclepias*, the remainder to *Pachycarpus* and *Xysmalobium*.

A. cultriformis is not uncommon in Natal, and the absence of bright colour in the flowers renders it more curious than beautiful, interesting to the botanist, but neglected by the horticulturist, and it has no economic or medicinal value so far as at present known.

Fig. 1, calyx; 2, corona and staminal column; 3, coronal lobe; 4, same, one side removed; 5, anther; 6, pollen masses; 7, pistil; *all enlarged*.

PLATE 600.

ADENIUM SWAZICUM, Stapf. (Flor. Cap. Vol. IV., Sect. I., p. 513.)

Nat. Order, APOCYNACEÆ.

A low, branching undershrub with sub-glaucous leaves and rosy-pink flowers. Stem and branches succulent, terete, rough with scars of fallen leaves, younger portion green, glabrous. Leaves exstipulate, subsessile, oblanceolate, acute at apex, gradually narrowed to the base, 3 to 4 inches long, $\frac{3}{4}$ to $1\frac{1}{4}$ inch broad, the young ones minutely and softly white tomentose, the mature ones very minutely puberulous, pale beneath, dark green and shining above, midrib prominent beneath, lateral veins 12 to 16 pairs, not prominent. Flowers terminal on the branches or axillary, usually solitary, occasionally two or more together; pedicels very short. Calyx 5 lines long, lanceolate-acuminate, minutely pubescent. Corolla 5-lobed, the lobes twisted to the right, pink, darker at throat, broadly rounded, 1 inch long and wide; infra-staminal part of the tube 4 lines long with 5 tomentose lines below the stamens, glabrous at the base; supra-staminal part 1 inch long, glabrous within; anthers 3 lines long, hairy on the back, apical tails 3 to 5 lines long, densely villous. Follicles not seen.

Habitat: SWAZILAND. Without precise locality, Mrs. Rathbone in *Herb. Bolus* 6208. NATAL. In Botanic Gardens, Durban, the plant brought from Lebombo Mts., Zululand, by Mr. H. D. Jameson and presented to the gardens where it flowered in January 1912. (In *Herb. Wood* 11974.)

The genus *Adenium* according to the *Flora Capensis* includes "about 12 species, extending through Tropical Africa to Socotra, and Arabia." The generic name is in reference to Aden, in which district one of the species, probably the first described one was found. We have in South Africa in addition to *A. Swazicum*, as follows:—*A. oleifolium*, Stapf., from Transvaal and Bechuanaland, and *A. multiflorum*, Klotzsch, from Zululand and Amatongaland. All of them are low undershrubs with more or less succulent stems and branches, and conspicuous brightly-coloured flowers, they are evidently long lived plants; specimens of *A. multiflorum* having been growing and flowering in the Durban Botanic Gardens for more than 25 years, their stems are covered with lichens, giving the plants the appearance of extreme old age, while the plants that we have are not more than three feet in height.

Fig. 1, calyx; 2 corolla tube, vertical section; 3, stamen; 4, pistil; 5, longitudinal section of carpel; all enlarged.



Adenium swazicum Stapf

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PART I. published	May, 1909.
PART II. „	December, 1910.
PART III. „	July, 1911.
PART IV. „	April, 1912.

Notes and Corrections for "Natal Plants," Volumes I. to VI.

VOL. I.

- Plate 1, *Moschosma riparia*, Hochst is now *Iboza riparia*, N. E. Brown, and 4 other species are added to the genus.
- „ 22, *Ecteinanthus origanoides*, T. And. is now *Isoglossa Woodii*, C. B. Clarke. It is stated in the note that the plant "is almost confined to the coast, reaching to more than about 2,000 ft. above sea level," since that was written, the plant has been found in some parts of Transvaal. Cattle and horses are fond of the plant as fodder.
- „ 69, *Rhus longifolia* is now *Protorhus longifolia*, Engler.
- „ 77, *Poivrea bracteosa*, Hochst. is now *Combretum bracteosum*, Brandis.
- „ 86, *Dregea floribunda*, E. M. This plate is correct so far only as the follicles are concerned, all else represents *Gymnema sylvestris*, R. Br. these two species are frequently found in company, and the collector brought leaves and flowers of one and follicles of the other, both plants belong to the same Order, both are climbers, and the *Dregea* is now known as *Marsdenia floribunda*, N. E. Brown.
- „ 93, *Ipomoea congesta*, R. Br. is on closer examination at the Kew Herbarium found to be identical with *I. purpurea*, Roth, which is now therefore its correct name.

VOL. II.

- „ 143, *Digitaria tenuifolia*, on Plate should be *Digitaria tenuiflora*, Beauv.

VOL. III.

- „ 203, *Carissa acuminata*, A.D.C is found to be *Carissa Arduinia*, Lam.
- „ 207, *Stylochiton natalense*, Schott. In a note to this species it is stated "This genus includes three species only," when that was written that statement was probably fairly correct so far as known to us, since that time, however, the genus has been worked out by Mr. N. E. Brown at Kew for the Flora of Tropical Africa, and 14 species are there described, of which 9 at least were at that time quite new to science.
- „ 213, *Calophanes Burkei*, T. And. This plant has now been transferred to the genus *Chaetacanthus*, and is now *C. Burchelli*, Nees.
- „ 216, *Justicia protracta*, T. And. has been found in working out the order at Kew by the late C. B. Clarke for the Flora Capensis to be *J. pulegioides*, E. M.

Plate 217, *Gomphocarpus physocarpus*, E. M. The genus *Gomphocarpus* having now been abolished, the correct name of this plant is *Asclepias physocarpa*, Schltr.

„ 246. *Turraea heterophylla*, Sm. is now *T. floribunda*, Hochst. Since the note to this plant was written we have seen a small tree of the species in a Berea garden, the tree was a well shaped one of about 15 feet in height, it was a mass of flowers with but few leaves, it is worth cultivation, but should not be planted too near a house, as when in full flower the scent is rather too powerful.

„ 252, *Triumfetta effusa*, E. Mey. is *T. rhomboidea*, Jacq.

„ 258, *Aloe natalensis*, Wood and Evans. When this was published as a new species some botanists were of opinion that the plant was really *Aloe arborescens*, Miller var *frutescens*, but I still hold to the opinion that the plant is quite distinct from the one described in the *Flora Capensis* under that name.

„ 283, *Cephalanthus palmata*, Sond. is now *Coccinea palmata*, Cogn.

„ 289, *Luffa sphaerica*, Sond. is now *Sphaerocycos sphaericus*, Hk. f.

VOL. IV.

„ 318, *Triumfetta pilosa*, Roth. should be *T. effusa*, E.M.

VOL. V.

„ 472, *Panicum pyramidale*, Lam. This grass is not uncommon in the streams of the coast districts, the pith in the mature culms is sometimes used for ornamental purposes.

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